

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377-307	RESISTOR	25 K	± 0.1 %	1/10 W
R2	-307				
R3	-307				
R4	-307				
R5	-333		25.708K	± 2 %	1/4 W
R6	1006750-36		1500	± 2 %	1/4 W
R7	-36				
R8	-36				
R9	-36				
R10	-36				
R11	-36				
R12	-36				
R13	-36				
R14	1010604-46		510	± 1 %	1 W
R15	1006750-56		10 K	± 2 %	1/4 W
R16	-56				
R17	-60		15 K		
R18	-60				
R19	-60				
R20	-60				
R21	-60				
R22	-60				
R23	-56		10 K		
R24	-44		3300		
R25	-44				
R26	-44				
R27	-44				
R28	-44				
R29	-44				
R30	-44				
R31	-44				
R32	1010377-304		4000	± 0.1 %	1/10 W
R33	1010377-305		8000	± 0.1 %	
R34	1010733-6		8000	± 1 %	
R35	-6		16 K		
R36	-7		16 K		
R37	-7		16 K		
R38	-7		16 K		
R39	-9		32 K		
R40	1010377-303		2.6027 K	± 0.1 %	
R41	1010377-302		1.9638 K	± 0.1 %	
R42	1010733-16		866.9	± 1 %	
R43	-5		409.5		
R44	-4		399.3		
R45	-3		196.8		
R46	-2		97.70		
R47	-1		97.41		
R48	1010377-313		128.146 K	± 0.1 %	
R49	-311		44.999 K		
R50	-310		30.067 K		
R51	-308		25.490 K		
R52	-308		25.490 K		
R53	-310		30.067 K		
R54	-311		44.999 K		
R55	-313		128.146 K		
R56	-332		125.842 K		
R57	-332		125.842 K		
R58	1010369-90		240 K	± 5 %	1/8 W
R59	1010369-90		240 K	± 5 %	1/8 W
R60	1010377-312		100 K	± 0.1 %	1/10 W
R61	1010377-312			± 0.1 %	
R62	1010733-11			± 1 %	
R63	-11				
R64	-11				
R65	-11				
R66	-11				
R67	-11				
R68	1006750-39		2000	± 2 %	1/4 W
R69	1006750-63		20 K	± 2 %	1/4 W
R70	1010733-12		25 K	± 1 %	1/10 W
R71	1006750-56		10 K	± 2 %	1/4 W
R72	-49		5100	± 2 %	
R73	-49		5100	± 2 %	
R74	-56		10 K	± 2 %	
R75	1010733-119		200 K	± 1 %	1/10 W
R76	1006750-80		100 K	± 2 %	1/4 W
R77	-73		51 K		
R78	-39		2000		
R79	-63		20 K		
R80	1010733-12		25 K	± 1 %	1/10 W
R81	1010733-12		25 K	± 1 %	1/10 W
R82	1010604-45		360	± 1 %	1 W
R83	1006750-73		51 K	± 2 %	1/4 W
R84	-73		51 K		
R85	-44		3300		
R86	1010604-39		2000	± 1 %	1 W
R87	1006750-32		1000	± 2 %	1/4 W
R88	-76		68 K		
R89	-49		5100		
R90	-2		56		
R91	-49		5100		
R92	-49		5100		
R93	-56		10 K		
R94	-32		1000		
R95	-60		15 K		
R96	-32		1000		
R97	-76		68 K		
R98	-49		5100		
R99	-49		5100		
R100	-2		56		
R101	-56		10 K		
R102	-49		5100		
R103	-32		1000		
R104	-32		1000		
R105	-32		1000		
R106	-59		13 K		
R107	-63		20 K		
R108	-65		24 K		
R109	-80		100 K		
R110	-56		10 K		
R111	-32		1000		
R112	1010369-105		1 MEG	± 5 %	1/8 W
R113	1006750-84		150 K	± 2 %	1/4 W
R114	1010369-92		300 K	± 5 %	1/8 W
R115	1006750-80		100 K	± 2 %	1/4 W
R116	-56		10 K		
R117	-8		100		
R118	-49		5100		
R119	-43		3000		
R120	-80		100 K		
R121	1010369-112		2 MEG	± 5 %	1/8 W
R122	-94		360 K		
R123	-105		1 MEG		
R124	1006750-80		100 K	± 2 %	1/4 W
R125	-84		150 K		
R126	-37		1600		

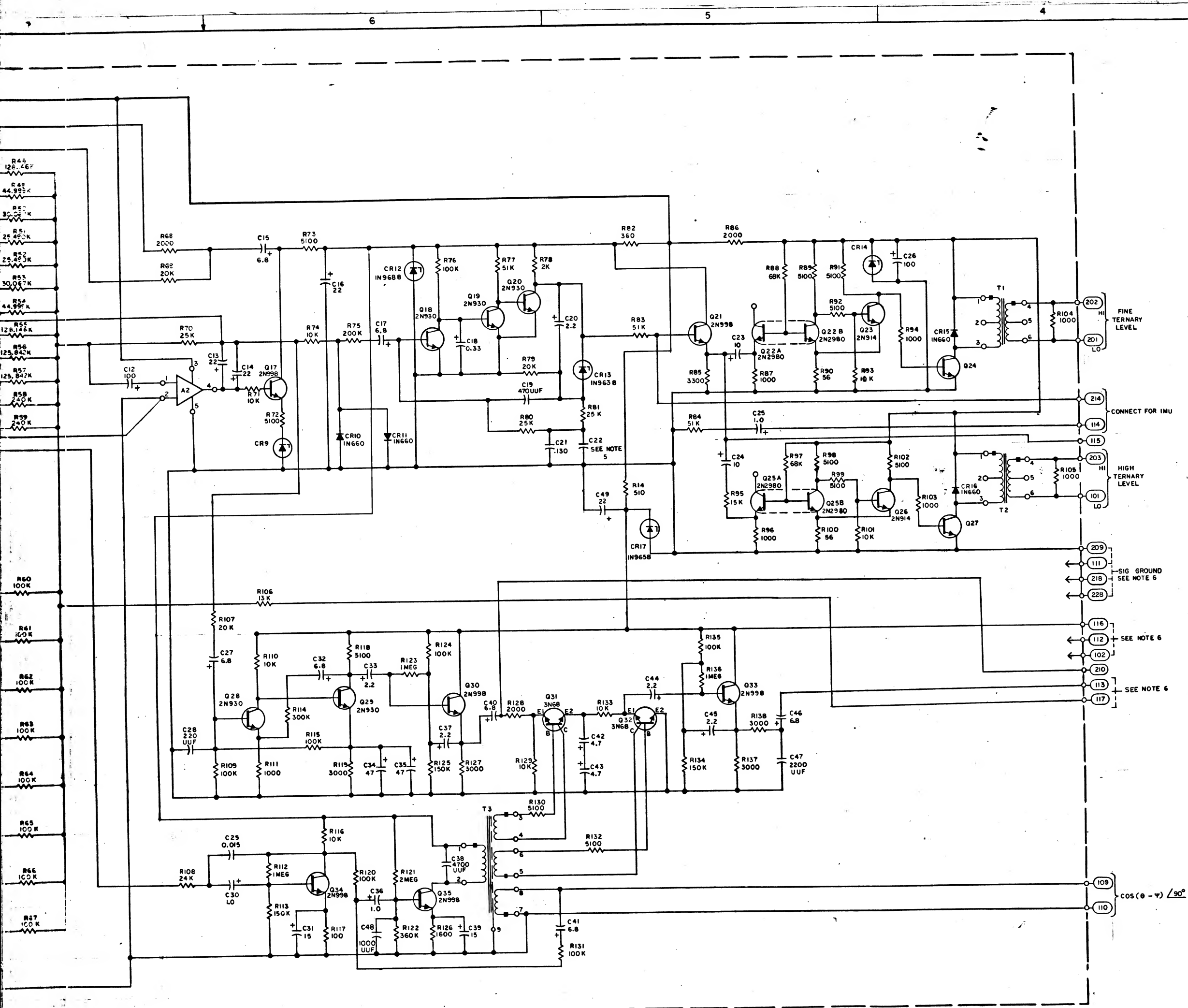
REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R127	1006750-43	RESISTOR	3000	± 2 %	1/4 W
R128	-39		2000		
R129	-56		10 K		
R130	-49		5100		
R131	-80		100 K		
R132	-49		5100		
R133	-56		10 K		
R134	-84		150 K		
R135	-80		100 K		
R136	1010369-105		1 MEG	± 5 %	1/8 W
R137	1006750-43		3000	± 2 %	1/4 W
R138	1006750-43		3000	± 2 %	1/4 W
C1	1006755-14	CAPACITOR	100	± 10 %	10 VDC
C2	-85		22		35 VDC
C3	-85		22		
C4	-79		6.8		
C5	-79				
C6	-79				
C7	-79				
C8	-79				
C9	-79				
C10	-79				
C11	-79				
C12	-14		100		10 VDC
C13	-85		22		35 VDC
C14	-85		22		
C15	-79		6.8		
C16	-85		22		
C17	-79		6.8		
C18	-63		0.33		
C19	1010871-20		470 UUF		100 VDC
C20	1006755-73		2.2		35 VDC
C21	1010317-4		1.30	± 1 %	30 VDC
C22	SEE NOTE 5			± 10 %	100 VDC
C23	1006755-81		10		35 VDC
C24	-81		10		
C25	-59		1.0		
C26	-14		100		10 VDC
C27	-79		6.8		35 VDC
C28	1010871-16		220 UUF		100 VDC
C29	1010871-39		0.015		100 VDC
C30	1006755-69		1.0		35 VDC
C31	-33		15		20 VDC
C32	-79		6.8		35 VDC
C33	-73		2.2		35 VDC
C34	-36		47		20 VDC
C35	-36		47		20 VDC
C36	-69		1.0		35 VDC
C37	-73		2.2		35 VDC
C38	1010871-28		4700 UUF		100 VDC
C39	1006755-33		15		20 VDC
C40	-79		6.8		35 VDC
C41	-79		6.8		35 VDC
C42	-10		4.7		10 VDC
C43	-10		4.7		10 VDC
C44	-73		2.2		35 VDC
C45	-73		2.2		
C46	-79		6.8		
C47	1010871-26		2200 UUF		100 VDC
C48	1010871-24		1000 UUF		100 VDC
C49	1006755-85		22		35 VDC
CR1	1010385	DIODE	1N660		
CR2					
CR3					
CR4					
CR5					
CR6					
CR7					
CR8					
CR9	1010372-15				
CR10	1010385		1N660		
CR11	1010385		1N660		
CR12	1010286-12		1N968B		
CR13	1010286-7		1N968B		
CR14	1010372-13				
CR15	1010385		1N660		
CR16	1010385		1N660		
CR17	1010286-9		1N968B		
Q1	1010343-3	TRANSISTOR			
Q2					
Q3					
Q4					
Q5					
Q6					
Q7					
Q8					
Q9					
Q10					
Q11					
Q12					
Q13					
Q14					
Q15					
Q16					
Q17	1010342		2N998		
Q18	1010337-1		2N930		
Q19	-1				
Q20	-1				
Q21	1010342		2N998		
Q22	1010652-1		2N2980		
Q23	1006752		2N914		
Q24	1010343-3				
Q25	1010652-1		2N2980		
Q26	1006752		2N914		
Q27	1010343-3				
Q28	1010397-1		2N930		
Q29	1010397-1		2N930		
Q30	1010342		2N998		
Q31	1010367		3N68		
Q32	1010367		3N68		
Q33	1010342		2N998		
Q34					
Q35					
A1	2007144	AMPLIFIER	SEE NOTE 4		
A2	2007144	AMPLIFIER	SEE NOTE 4		
T1	1010274	TRANSFORMER			
T2	1010274				
T3	1010274				

CHART A	
PART NO.	VALUE
1010871-24	1000 UUF
-25	2000 UUF
-26	2000 UUF
-27	3300 UUF
-28	4700 UUF
-29	5000 UUF
-30	6800 UUF
-31	0.010

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	PROD NO.
LIST OF MATERIALS			
<div style="display: flex; justify-content: space-between;"> <div> <p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES</p> <p>DO NOT SCALE THIS DRAWING</p> <p>MATERIAL</p> <p>HEAT TREATMENT</p> <p>FINISH</p> </div> <div> <p>APPROVAL</p> <p>DATE</p> <p>SCALE</p> <p>WT</p> </div> </div>			
<p>MASTER</p> <p>2010058</p>		<p>MANHATTAN SPACECRAFT CENTER HOUSTON, TEXAS</p> <p>SCHEMATIC MAIN SUMMING AMPL AND QUADRATURE REJECTION</p> <p>CODE IDENT NO. 2010058</p>	

2010058 A



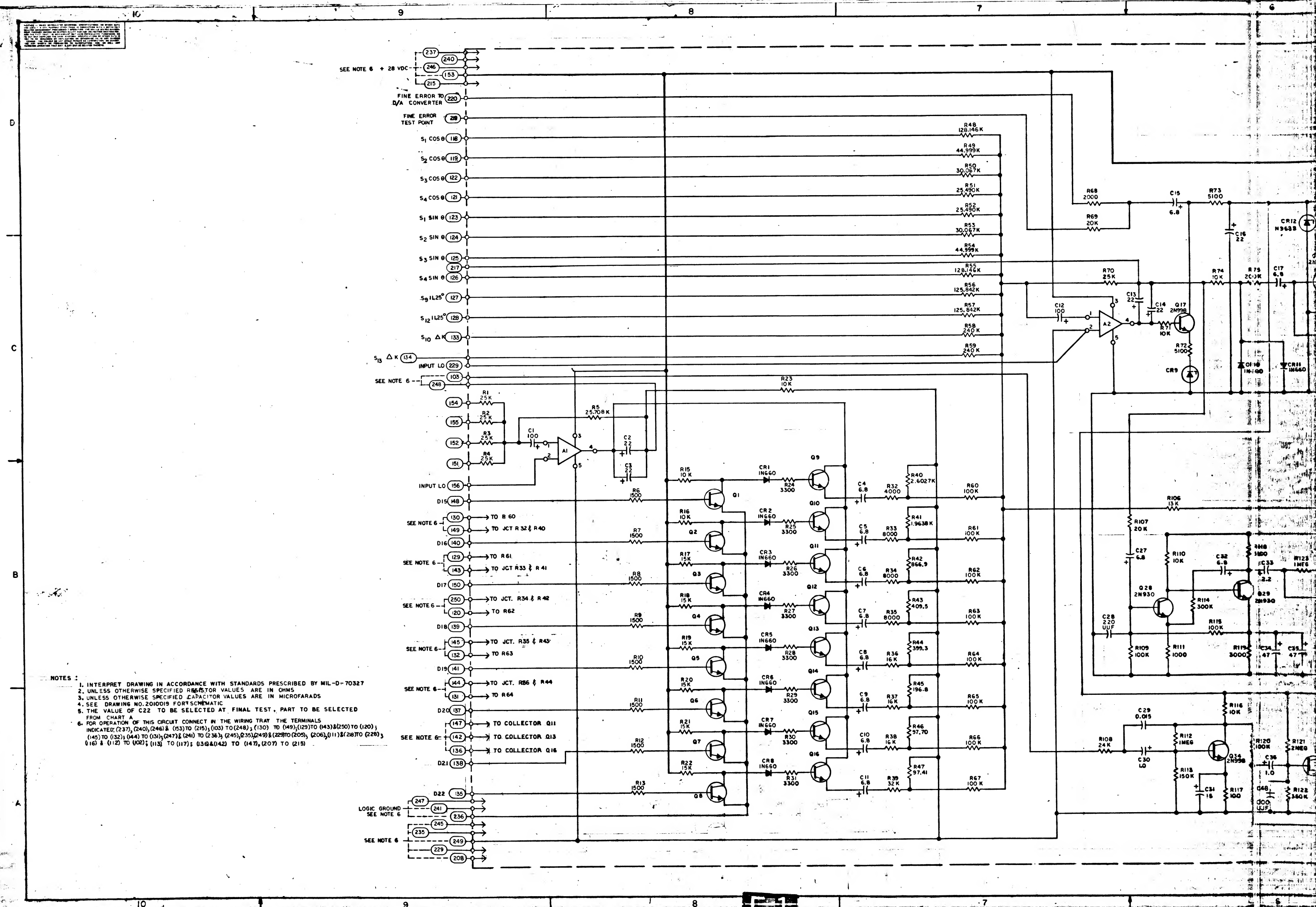


REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377-307	RESISTOR	25 K	±0.1%	1/10 W
R2	-307				
R3	-307				
R4	-307				
R5	1006750-36		25.708K	±2%	1/4 W
R6	-36		1500	±2%	1/4 W
R7	-36				
R8	-36				
R9	-36				
R10	-36				
R11	-36				
R12	-36				
R13	-36				
R14	1010604-46		910	±1%	1 W
R15	1006750-56		10 K	±2%	1/4 W
R16	-56				
R17	-60		15 K		
R18	-60				
R19	-60				
R20	-60				
R21	-60				
R22	-56		10 K		
R23	-44		3300		
R24	-44				
R25	-44				
R26	-44				
R27	-44				
R28	-44				
R29	-44				
R30	-44				
R31	1010377-304		4000	±0.1%	1/10 W
R32	1010377-305		8000	±0.1%	
R33	1010733-6		8000	±1%	
R34	-6		16 K		
R35	-7		16 K		
R36	-7		16 K		
R37	-7		16 K		
R38	-9		32 K		
R39	1010377-303		2.602 K	±0.1%	
R40	1010377-302		1.9638 K	±0.1%	
R41	1010733-16		866.9	±1%	
R42	-5		409.5		
R43	-4		139.3		
R44	-3		136.8		
R45	-2		97.70		
R46	-1		97.41		
R47	1010377-313		128.146 K	±0.1%	
R48	-311		44.999 K		
R49	-310		30.067 K		
R50	-308		25.490 K		
R51	-308		25.490 K		
R52	-310		30.067 K		
R53	-313		44.999 K		
R54	-332		128.146 K		
R55	-332		125.842 K		
R56	1010369-90		240 K	±5%	1/8 W
R57	1010369-90		240 K	±5%	1/8 W
R58	1010377-312		100 K	±0.1%	1/10 W
R59	1010377-312		100 K	±0.1%	1/10 W
R60	1010733-11		11		
R61	-11				
R62	-11				
R63	-11				
R64	-11				
R65	-11				
R66	-11				
R67	1006750-39		2000	±2%	1/4 W
R68	1006750-63		25 K	±1%	1/10 W
R69	1010733-12		10 K	±2%	1/4 W
R70	1006750-56		5100	±2%	1/4 W
R71	-49		5100	±2%	1/4 W
R72	-56		10 K	±2%	1/10 W
R73	-73		200K	±1%	1/10 W
R74	1010733-119		100K	±2%	1/4 W
R75	1006750-80		51K	±2%	1/4 W
R76	-73		2000		
R77	-39		2000		
R78	-63		25K	±1%	1/10 W
R79	1010733-12		25K	±1%	1/10 W
R80	1010733-12		25K	±1%	1/10 W
R81	1010604-45		360	±1%	1 W
R82	1006750-73		51K	±2%	1/4 W
R83	-73		51K		
R84	-44		3300		
R85	1010604-39		2000	±1%	1 W
R86	1006750-32		68K	±2%	1/4 W
R87	-49		5100		
R88	-49		5100		
R89	-49		5100		
R90	-49		5100		
R91	-49		5100		
R92	-49		5100		
R93	-56		10 K		
R94	-32		1000		
R95	-60		15 K		
R96	-32		1000		
R97	-49		5100		
R98	-49		5100		
R99	-49		5100		
R100	-2		96		
R101	-56		10 K		
R102	-49		5100		
R103	-32		1000		
R104	-32		1000		
R105	-32		1000		
R106	-59		13 K		
R107	-63		20K		
R108	-65		24K		
R109	-80		100K		
R110	-56		10 K		
R111	-32		1000		
R112	1010369-105		150 K	±5%	1/8 W
R113	1006750-84		150 K	±5%	1/8 W
R114	1010369-92		300K	±5%	1/8 W
R115	1006750-80		100K	±2%	1/4 W
R116	-56		10 K		
R117	-8		100		
R118	-49		5100		
R119	-43		3000		
R120	-80		100K		
R121	1010369-112		2 MEG	±5%	1/8 W
R122	-105		MEG		
R123	1006750-80		100K	±2%	1/4 W
R124	-84		150 K		
R125	-37		1600		

2010058

A

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REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R127	1006750 - 43	RESISTOR	3000	± 2 %	1/4 W
R128	-67		30 K		
R129	-80		15 K		
R130	-49		5100		
R131	-80		100 K		
R132	-49		5100		
R133	-56		10 K		
R134	-84		150 K		
R135	↓		100 K		
R136	1010369 -105		1 MΩ	± 5 %	1/2 W
R137	1006750 -43		3000	± 2 %	1/4 W
R138	1006750 -43		3000	± 2 %	1/4 W
R139	1006750 -63	↓	20 K	± 2 %	1/4 W
C1	1006755 -14	CAPACITOR	100	± 10 %	10 VDC
C2	-85		22		35 VDC
C3	-85		22		
C4	-79		6.8		
C5	-79				
C6	-79				
C7	-79				
C8	-79				
C9	-79				
C10	-79				
C11	-79				
C12	-14		100		10 VDC
C13	-85		22		35 VDC
C14	-85		22		
C16	-85		22		
C17	-79		6.8		
C18	-63		0.33		
C19	1006777 -20		470 UUF		100VDC
C20	1006755 -73		22		35 VDC
C21	1010317 -4		.130	± 1 %	30 VDC
C22	SEE NOTE 5		—	± 10 %	100VDC
C23	1006755 -81		10		35 VDC
C24	-81		10		
C25	-69		1.0		
C26	-14		100		10 VDC
C27	-79		6.8		35 VDC
C28	1006777 -26		220 UUF		100VDC
C29	1006777 -33		0.015		100VDC
C30	1006755 -69		1.0		35 VDC
C31	-33		15		20 VDC
C32	-79		6.8		35 VDC
C33	-73		2.2		35 VDC
C34	-36		47		20 VDC
C35	-36		47		20 VDC
C36	-69		1.0		35 VDC
C37	-73		2.2		35 VDC
C38	1006777 -28		4700 UUF		100VDC
C39	1006755 -33		15		20 VDC
C40	-79		6.8		35 VDC
C41	-79		6.8		35 VDC
C42	-10		4.7		10 VDC
C43	-10		4.7		10 VDC
C44	-73		2.2		35 VDC
C45	-73		2.2		
C46	↓		6.8		
C47	1006777 -26		220 UUF		100 VDC
C48	1006777 -24		1000UUF		100VDC
C49	1006755 -85		22		35 VDC
C50	1006755 -79		6.8		35 VDC
CR1	1010385	DIODE	1N660		
CR2					
CR3					
CR4					
CR5					
CR6					
CR7					
CR8	1010385				
CR10	1010385		1N660		
CR11	1010385		1N660		
CR12	1010830 -12		1N963B		
CR13	1010830 -7		1N963B		
CR14	1010372 -13				
CR15	1010385		1N660		
CR16	1010385		1N660		
CR17	1010830 -9	↓	1N965B		
Q1	1010343-3	TRANSISTOR			
Q2					
Q3					
Q4					
Q5					
Q6					
Q7					
Q8					
Q9					
Q10					
Q11					
Q12					
Q13					
Q14					
Q15					
Q16	1010343-3				
Q18	1010397 -1		2N930		
Q19	-1				
Q20	↓				
Q21	1010342		2N998		
Q22	1010652 -1		2N2980		
Q23	1006752		2N914		
Q24	1010343-3				
Q25	1010652 -1		2N2980		
Q26	1006752		2N914		
Q27	1010343-3				
Q28	1010397 -1		2N930		
Q29	1010397 -1		2N930		
Q30	1010342		2N998		
Q31	1010367		3N68		
Q32	1010367		3N68		
Q33	1010342		2N998		
Q34	↓				
Q35	↓				
A1	2007144	AMPLIFIER		SEE NOTE 4	
A2	2007144	AMPLIFIER		SEE NOTE 4	
T1	1010274	TRANSFORMER			
T2	1010274				
T3	1010274	↓			

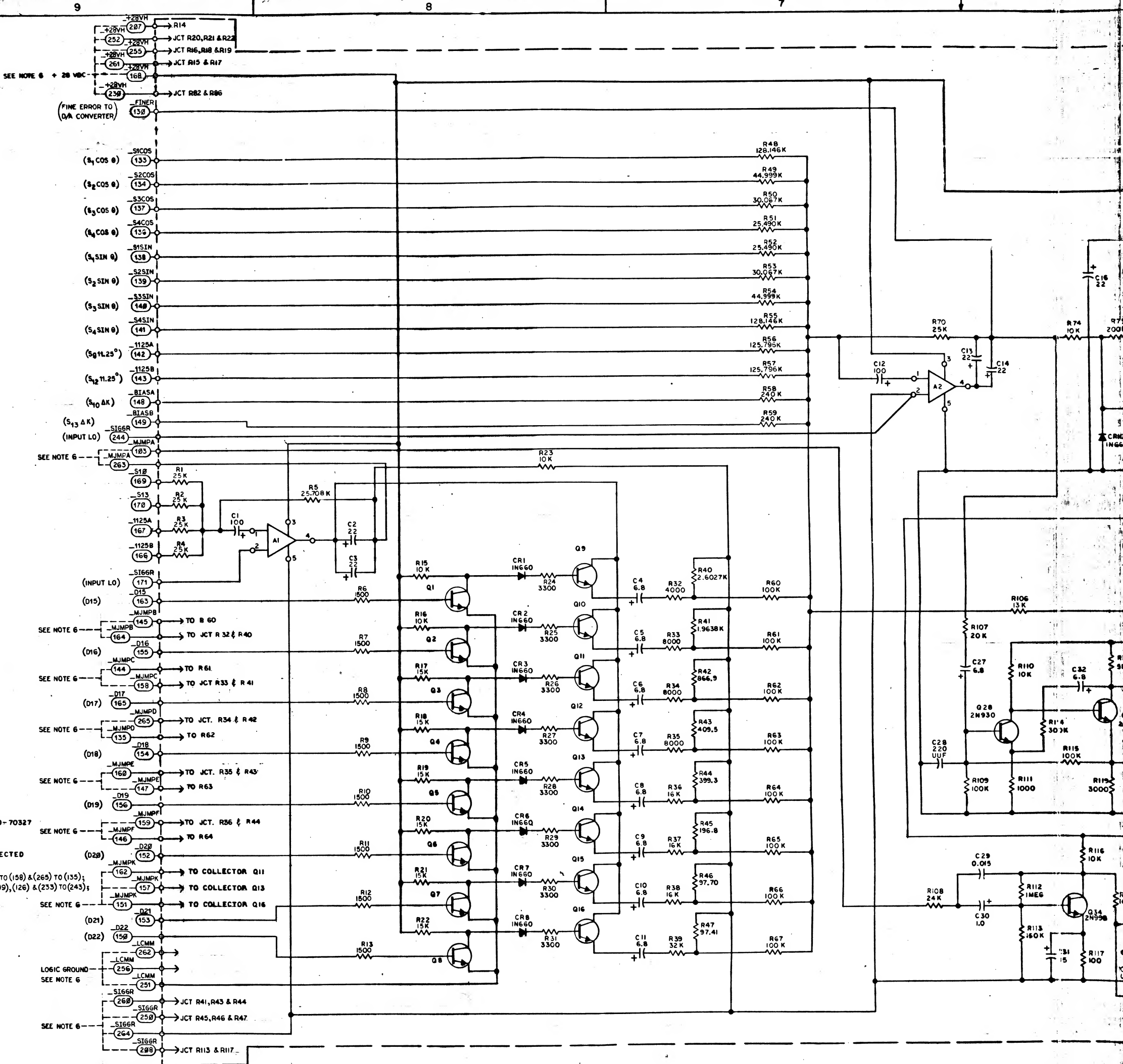
QTY REQD		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		FINC NO.	
LIST OF MATERIALS							
M1V INSTRUMENTATION LAB Commercial Mass PMS NO. _____ (Contract)				MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ± ±				DRAWN BY <u>W. J. G. 10/1/64</u> DATE <u>9/24/64</u> CHECKED BY <u>W. J. G. 10/1/64</u> APPROVED BY <u>W. J. G. 10/1/64</u> APPROVE <u>W. J. G. 10/1/64</u>			
DO NOT SCALE THIS DRAWING				SCHEMATIC MAIN SUMMING AMPL AND QUADRATURE RECTIFIER			
MATERIAL				CODE IDENT NO. SIZE NASA SP SERING NO. _____ _____ _____ _____ 2016 758			
HEAT TREATMENT							
NEAT ASBY USED ON				FINAL FINISH			
APPLICATION				MFG APPROVAL <u>W. J. G. 10/1/64</u> DATE <u>9/24/64</u> MFG NO. _____			
				SCALE UNIT SHEET OF A			



NOTES: 1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
4. SEE DRAWING NO. 2010019 FOR SCHEMATIC
5. THE VALUE OF C22 TO BE SELECTED AT FINAL TEST, PART TO BE SELECTED FROM CHART A
6. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (207), (252), (255), (261) & (168) TO (230); (103) TO (263); (145) TO (164); (144) TO (158) & (265) TO (135); (160) TO (147); (159) TO (146); (262) & (256) TO (251); (260), (250) & (264) TO (208); (209), (126) & (233) TO (243); (131) & (127) TO (102); (128) TO (132); (151) & (157) TO (162)

NOTES:

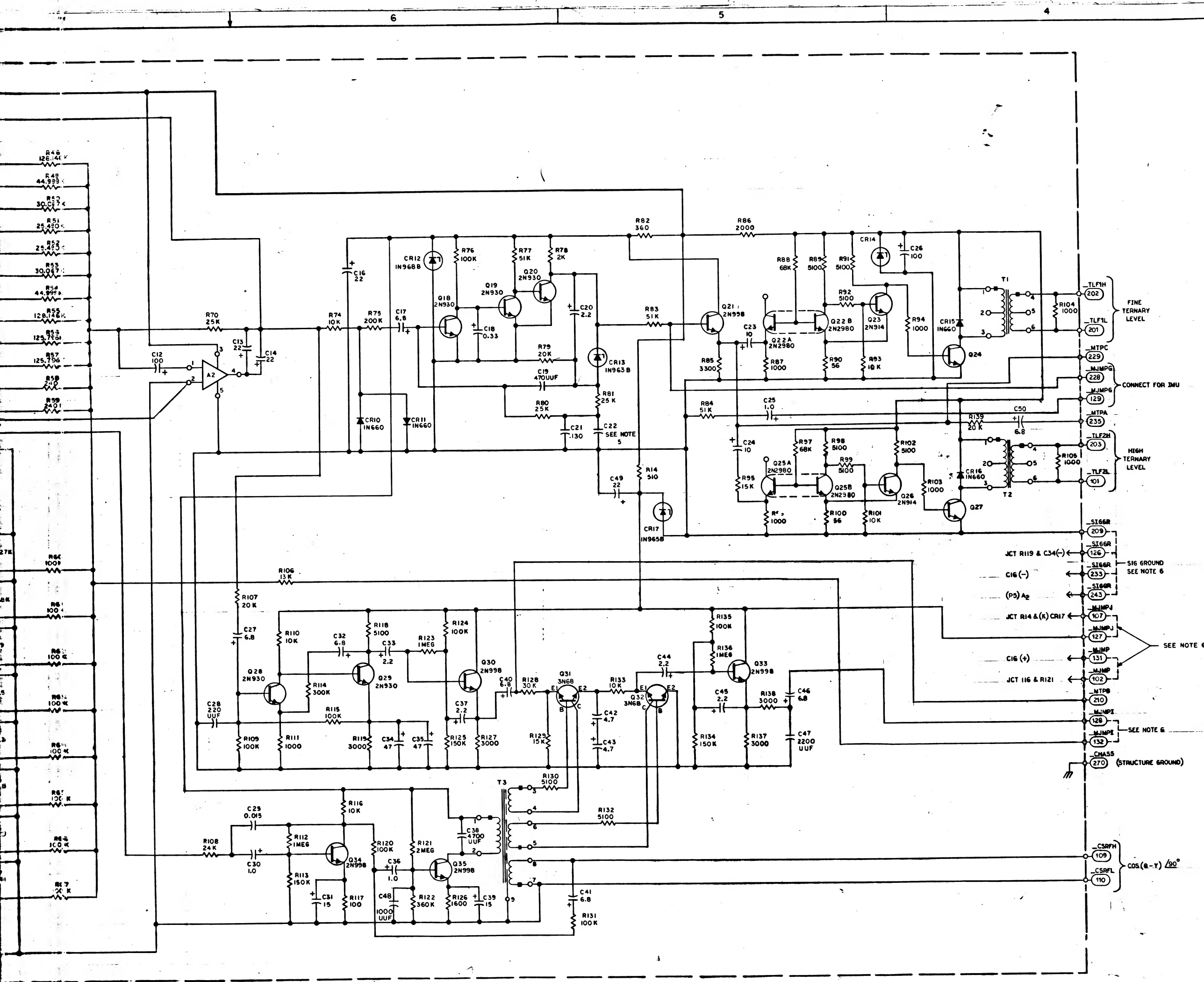
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
4. SEE DRAWING NO. 2010019 FOR SCHEMATIC
5. THE VALUE OF C22 TO BE SELECTED AT FINAL TEST, PART TO BE SELECTED FROM CHART A
6. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (207), (252), (255), (261) & (168) TO (230); (103) TO (263); (145) TO (164); (144) TO (158) & (265) TO (135); (160) TO (147); (159) TO (146); (262) & (256) TO (251); (260), (250) & (264) TO (208); (209), (126) & (233) TO (243); (131) & (127) TO (102); (128) TO (132); (151) & (157) TO (162)



3

2

34



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377 - 30	RESISTOR	25 K	± 0.1 %	1/10 W
R2	- 30				
R3	- 30				
R4	- 301				
R5	- 333				
R6	1006750 - 36		25.708K	± 2 %	1/4 W
R7	- 36		800		
R8	- 36				
R9	- 36				
R10	- 36				
R11	- 36				
R12	- 36				
R13	- 36				
R14	1010604 - 46		510	± 1 %	1/4 W
R15	1006750 - 56		2 K	± 2 %	1/2 W
R16	- 56		10 K		
R17	- 60		15 K		
R18	- 60				
R19	- 60				
R20	- 60				
R21	- 60				
R22	- 60				
R23	- 60				
R24	- 56		10 K		
R25	- 44		3300		
R26	- 44				
R27	- 44				
R28	- 44				
R29	- 44				
R30	- 44				
R31	- 44				
R32	1010377 - 304		4000	± 0.1 %	1/10 W
R33	1010377 - 305		8000	± 0.1 %	
R34	1010733 - 6		8000	± 1 %	
R35	- 6		8000		
R36	- 7		16 K		
R37	- 7		16 K		
R38	- 7		16 K		
R39	- 7		32 K		
R40	1010377 - 303		2.5027 K	± 0.1 %	
R41	1010377 - 302		1.9538 K	± 0.1 %	
R42	1010733 - 16		965.9	± 1 %	
R43	- 5		409.5		
R44	- 4		399.3		
R45	- 3		196.8		
R46	- 2		97.70		
R47	- 1		97.41		
R48	1010377 - 313		128.146 K	± 0.1 %	
R49	- 311		44.999 K		
R50	- 310		30.067 K		
R51	- 308		25.490 K		
R52	- 308		25.190 K		
R53	- 310		30.067 K		
R54	- 311		44.999 K		
R55	- 313		128.146 K		
R56	- 345		125.796 K		
R57	1010369 - 90		240 K	± 5 %	1/8 W
R58	1010369 - 90		240 K	± 5 %	1/8 W
R59	1010377 - 312		240 K	± 0.1 %	1/10 W
R60	1010377 - 312		100 K	± 0.1 %	1/10 W
R61	1010377 - 312				
R62	1010733 - 11			± 1 %	
R63	- 11				
R64	- 11				
R65	- 11				
R66	- 11				
R67	- 11				
R70	1010377 - 307		25 K	± 0.1 %	1/10 W
R71					
R72					
R73					
R74	1006750 - 56		10 K	± 2 %	1/4 W
R75	1010733 - 113		200 K	± 1 %	1/10 W
R76	1006750 - 80		100 K	± 2 %	1/4 W
R77	- 73		51 K		
R78	- 39		2000		
R79	- 63		20 K		
R80	1010733 - 12		25 K	± 1 %	1/10 W
R81	1010733 - 12		25 K	± 1 %	1/10 W
R82	1010604 - 45		360	± 1 %	1/4 W
R83	1006750 - 73		51 K	± 2 %	1/4 W
R84	- 73		51 K		
R85	- 44		3300		
R86	1010604 - 39		2000	± 1 %	1 W
R87	1006750 - 32		1000	± 2 %	1/4 W
R88	- 76		68 K		
R89	- 49		510		
R90	- 49		510		
R91	- 49		510		
R92	- 49		510		
R93	- 56		10 K		
R94	- 32		1000		
R95	- 60		15 K		
R96	- 32		1000		
R97	- 76		68 K		
R98	- 49		510		
R99	- 49		510		
R100	- 2		10 K		
R101	- 56		10 K		
R102	- 49		510		
R103	- 32		1000		
R104	- 32		1000		
R105	- 32		1000		
R106	- 49		15 K		
R107	- 63		510		
R108	- 63		510		
R109	- 80		10 K		
R110	- 56		10 K		
R111	- 32		1000		
R112	1010369 - 105		1MEG	± 5 %	1/8 W
R113	1006750 - 84		50 K	± 2 %	1/4 W
R114	1010369 - 92		300 K	± 5 %	1/8 W
R115	1006750 - 80		10 K	± 2 %	1/4 W
R116	- 8		100		
R117	- 8		100		
R118	- 49		5100		
R119	- 43		3000		
R120	- 80		100 K		
R121	1010369 - 112		2MEG	± 5 %	1/8 W
R122	- 94		360 K		
R123	- 105		1MEG		
R124	1006750 - 80		100 K	± 2 %	1/4 W
R125	- 84		150 K		
R126	- 37		1600		

2010058

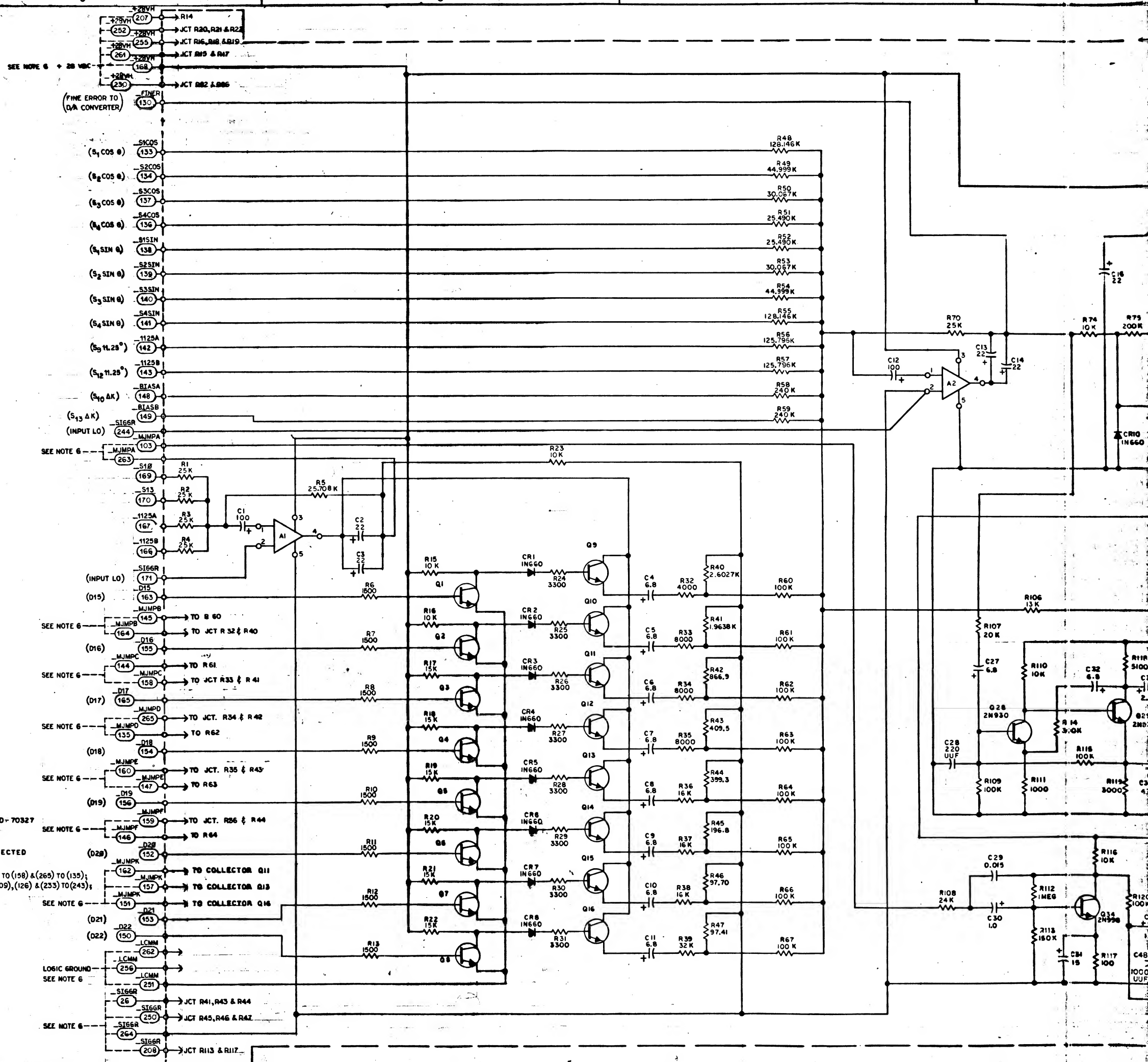
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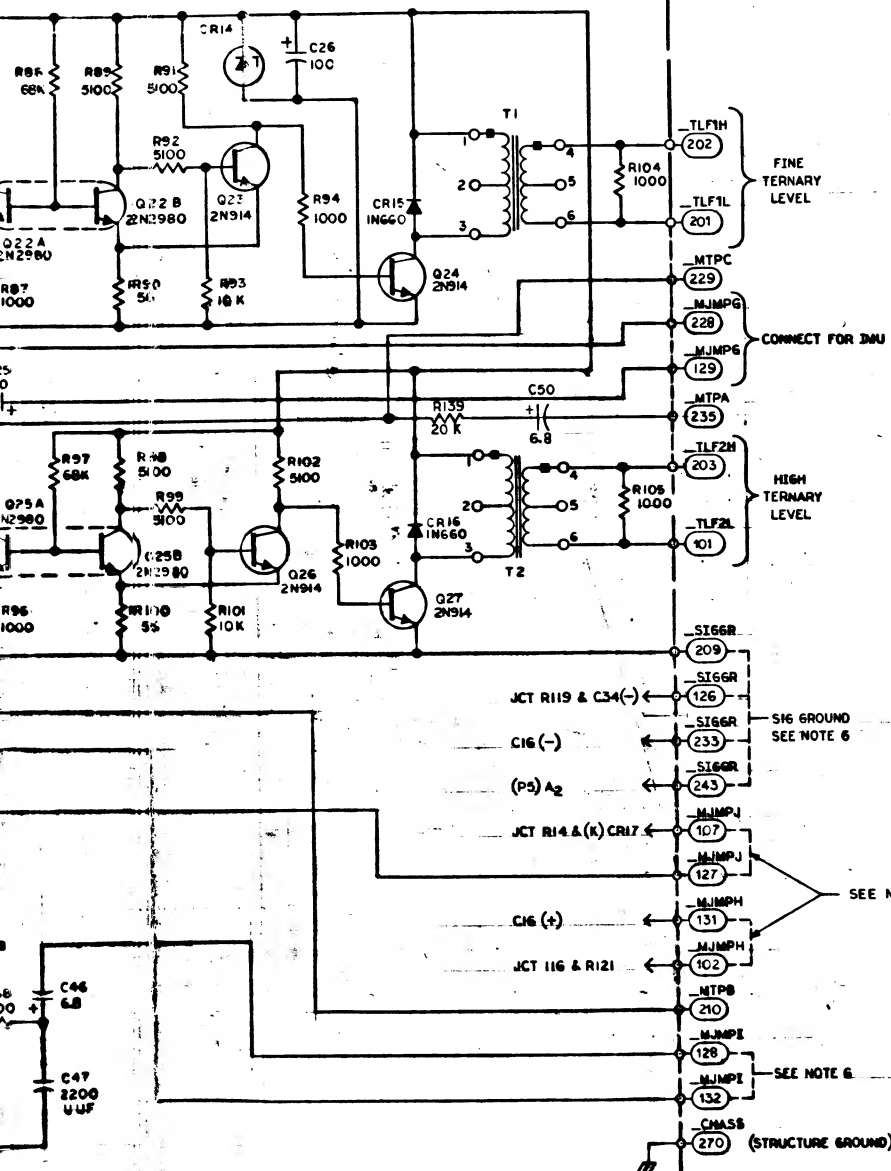


1. INTERPRET DRAWINGS IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
 3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
 4. SEE DRAWING NO. 2010019 FOR SCHEMATIC
 5. THE VALUE OF C22 TO BE SELECTED AT FINAL TEST, PART TO BE SELECTED FROM CHART A
 6. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (207), (252), (255), (261) & (168) TO (230); (103) TO (263); (145) TO (164); (144) TO (158) & (265) TO (135); (160) TO (147); (159) TO (146); (262) & (256) TO (251); (260), (253) & (264) TO (208); (209), (126) & (233) TO (243); (131) TO (102); (128) TO (132); (151) & (157) TO (162); (107) TO (127)

NOTES:

1. INTERPRET DRAWINGS IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
4. SEE DRAWING NO. 2010019 FOR SCHEMATIC
5. THE VALUE OF C22 TO BE SELECTED AT FINAL TEST, PART TO BE SELECTED FROM CHART A
6. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (207), (252), (255), (261) & (168) TO (230); (103) TO (263); (145) TO (164); (144) TO (158) & (265) TO (135); (160) TO (147); (159) TO (146); (262) & (256) TO (251); (260), (253) & (264) TO (208); (209), (126) & (233) TO (243); (131) TO (102); (128) TO (132); (151) & (157) TO (162); (107) TO (127)





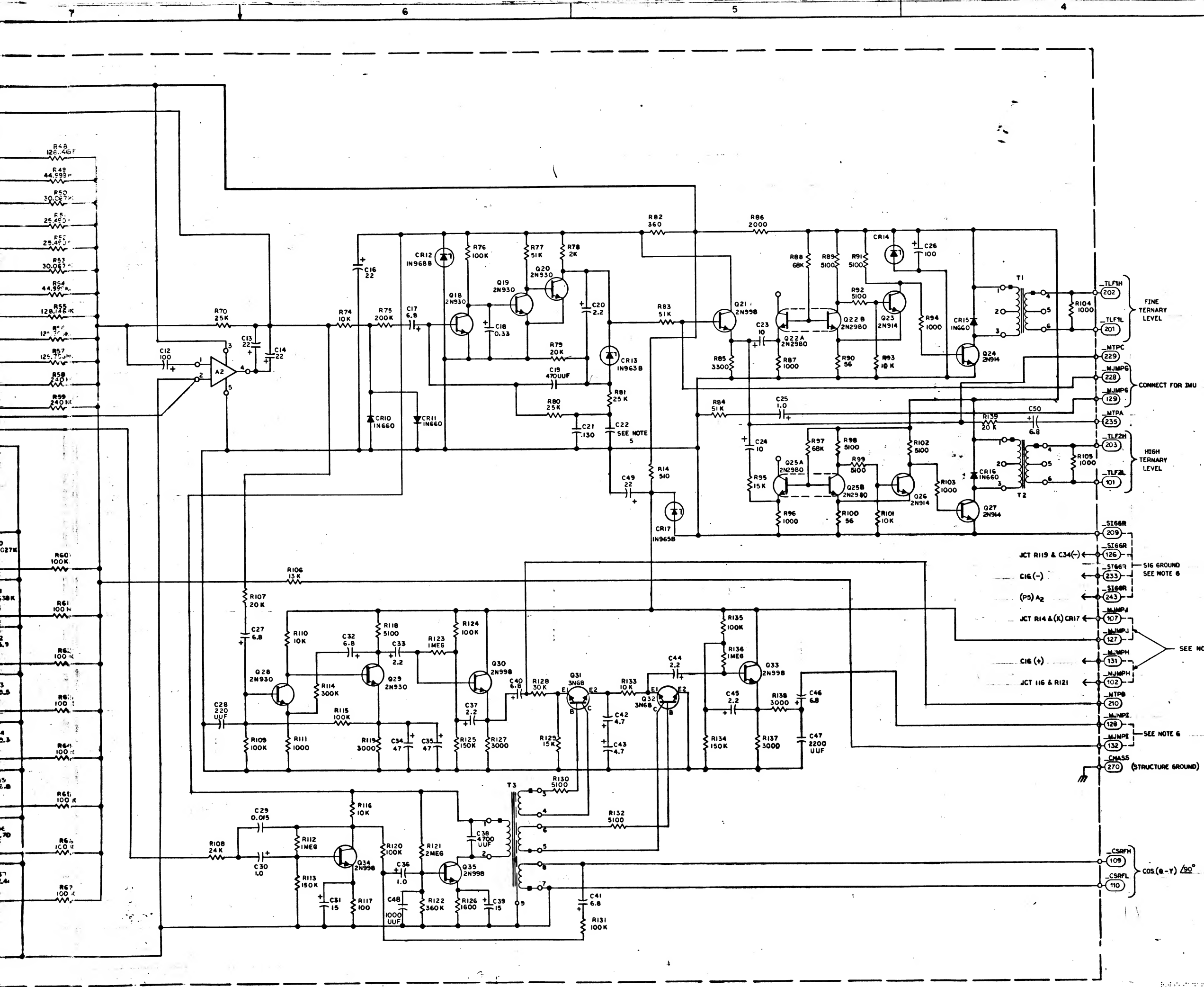
REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377-307	RESISTOR	25 K	± 0.1%	1/10 W
R2	-307				
R3	-307				
R4	-333		25.708K		
R5	1006750-36		1500	± 2%	1/4 W
R6	-36				
R7	-36				
R8	-36				
R9	-36				
R10	-36				
R11	-36				
R12	-36				
R13	-36				
R14	1010604-46		510	± 1%	1 W
R15	1006750-56		10 K	± 2%	1/4 W
R16	-56				
R17	-60		15 K		
R18	-60				
R19	-60				
R20	-60				
R21	-60				
R22	-60				
R23	-56		10 K		
R24	-44		3300		
R25	-44				
R26	-44				
R27	-44				
R28	-44				
R29	-44				
R30	-44				
R31	-44				
R32	1010377-304		4000	± 0.1%	1/10 W
R33	1010377-305		8000	± 0.1%	
R34	1010733-6		8000	± 1%	
R35	-6		16 K		
R36	-7		16 K		
R37	-7		16 K		
R38	-7		16 K		
R39	-9		32 K		
R40	1010377-303		2.6027 K	± 0.1%	
R41	1010377-302		1.9638 K	± 0.1%	
R42	1010733-16		866.9	± 1%	
R43	-5		409.5		
R44	-4		359.3		
R45	-2		196.8		
R46	-1		97.70		
R47	-1		97.41		
R48	1010377-313		128.146 K	± 0.1%	
R49	-311		44.999 K		
R50	-310		30.067 K		
R51	-308		25.490 K		
R52	-308		25.490 K		
R53	-310		30.067 K		
R54	-311		44.999 K		
R55	-313		128.146 K		
R56	-345		125.796 K		
R57	-345		125.796 K		
R58	1010369-90		240 K	± 5%	1/8 W
R59	1010369-90		240 K	± 5%	1/8 W
R60	1010377-312		100 K	± 0.1%	1/10 W
R61	1010377-312				
R62	1010733-11			± 1%	
R63	-11				
R64	-11				
R65	-11				
R66	-11				
R67	-11				
R70	1010377-307		25 K	± 0.1%	1/10 W
R71					
R72					
R73					
R74	1006750-56		10 K	± 2%	1/4 W
R75	1010733-119		200K	± 1%	1/10 W
R76	1006750-80		100K	± 2%	1/4 W
R77	-73		51 K		
R78	-39		2000		
R79	-63		20 K		
R80	1010733-12		25 K	± 1%	1/10 W
R81	1010733-12		25 K	± 1%	1/10 W
R82	1010604-45		360	± 1%	1 W
R83	1006750-73		51 K	± 2%	1/4 W
R84	-73		51 K		
R85	-44		5300		
R86	1010604-39		2000	± 1%	1 W
R87	1006750-32		1000	± 2%	1/4 W
R88	-76		68K		
R89	-49		5100		
R90	-2		56		
R91	-49		5100		
R92	-49		5100		
R93	-56		10 K		
R94	-32		1000		
R95	-60		15 K		
R96	-32		1000		
R97	-76		68K		
R98	-49		5100		
R99	-49		5100		
R100	-2		56		
R101	-56		10 K		
R102	-49		5100		
R103	-32		1000		
R104	-32		1000		
R105	-32		1000		
R106	-59		13 K		
R107	-63		20 K		
R108	-65		24 K		
R109	-80		100 K		
R110	-56		1000		
R111	-32		1000		
R112	1010369-105		1MEG	± 5%	1/8 W
R113	1006750-84		150 K	± 2%	1/4 W
R114	1010369-92		300K	± 5%	1/8 W
R115	1006750-80		100 K	± 2%	1/4 W
R116	-56		10 K		
R117	-8		100		
R118	-49		5100		
R119	-43		3000		
R120	-80		100 K		
R121	1010369-112		2MEG	± 5%	1/8 W
R122	-94		360 K		
R123	-105		1MEG		
R124	1006750-80		100 K	± 2%	1/4 W
R125	-84		150 K		
R126	-37		1600		

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R127	1006750-43	RESISTOR	3000	± 2%	1/4 W
R128	-67		30 K		
R129	-60		15 K		
R130	-49		5100		
R131	-80		100 K		
R132	-49		5100		
R133	-56		10 K		
R134	-84		150 K		
R135	-80		100 K		
R136	1010369-105		1MEG	± 5%	1/8 W
R137	1006750-43		3000	± 2%	1/4 W
R138	1006750-43		3000	± 2%	1/4 W
R139	1006750-63		20 K	± 2%	1/4 W
C1	1006755-14	CAPACITOR	100	± 10%	10 VDC
C2	-85		22		35 VDC
C3	-85		22		
C4	-79		6.8		
C5	-79				
C6	-79				
C7	-79				
C8	-79				
C9	-79				
C10	-79				
C11	-79				
C12	-14		100		10 VDC
C13	-85		22		35 VDC
C14	-85		22		
C16	-85		6.8		
C17	-79		0.33		
C18	-63		0.33		
C19	1006777-20		470 UUF		100 VDC
C20	1006755-73		2.2		35 VDC
C21	1010317-4		1.30	± 1%	30 VDC
C22	SEE NOTE 5			± 10%	100 VDC
C23	1006755-81		10		35 VDC
C24	-81		10		
C25	-69		1.0		
C26	-14		100		10 VDC
C27	-79		6.8		35 VDC
C28	1006777-16		220 UUF		100 VDC
C29	1006777-39		0.015		100 VDC
C30	1006755-69		1.0		35 VDC
C31	-33		15		20 VDC
C32	-79		6.8		35 VDC
C33	-73		2.2		35 VDC
C34	-36		47		20 VDC
C35	-36		47		20 VDC
C36	-69		1.0		35 VDC
C37	-73		2.2		35 VDC
C38	1006777-28		4700 UUF		100 VDC
C39	1006755-33		15		20 VDC
C40	-79		6.8		35 VDC
C41	-79		6.8		35 VDC
C42	-10		4.7		10 VDC
C43	-10		4.7		10 VDC
C44	-73		2.2		35 VDC
C45	-73		2.2		
C46	-79		6.8		
C47	1006777-26		2200 UUF		100 VDC
C48	1006777-24		1000 UUF		100 VDC
C49	1006755-85		22		35 VDC
C50	1006755-79		6.8		35 VDC
CR1	1010385	DIODE	1N660		
CR2					
CR3					
CR4					
CR5					
CR6					
CR7					
CR8	1010385				
CR10	1010385		1N660		
CR11	1010385		1N660		
CR12	1010830-12		1N968B		
CR13	1010830-7		1N963B		
CR14	1010372-13		1N660		
CR15	1010385		1N660		
CR16	1010385		1N660		
CR17	1010830-9		1N963B		
Q1	1010343-3	TRANSISTOR			
Q2					
Q3					
Q4					
Q5					
Q6					
Q7					
Q8					
Q9					
Q10					
Q11					
Q12					
Q13					
Q14					
Q15					
Q16	1010343-3				
Q18	1010397-1		2N930		
Q19	-1				
Q20	-1				
Q21	1010342		2N998		
Q22	1010652-1		2N2980		
Q23	1006752		2N914		
Q24	1006752		2N914		
Q25	1010652-1		2N2980		
Q26	1006752		2N914		
Q27	1006752		2N914		
Q28	1010397-1		2N930		
Q29	1010397-1		2N930		
Q30	1010342		2N998		
Q31	1010367		3N 68		
Q32	1010367		3N 68		
Q33	1010342		2N998		
Q34					
Q35					
A1	2007144	AMPLIFIER	SEE NOTE 4		
A2	2007144	AMPLIFIER	SEE NOTE 4		
T1	1010274	TRANSFORMER			
T2	1010274				
T3	1010274				

CHART A	
PART NO.	VALUE
1006777-24	1000 UUF
-25	2000 UUF
-26	2200 UUF
-27	3300 UUF
-28	4700 UUF
-29	5000 UUF
-30	6800 UUF
-31	0.010

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	REV NO.
LIST OF MATERIALS			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES DO NOT SCALE THIS DRAWING		INSTRUMENTATION LAB CHECKED BY <i>[Signature]</i> APPROVAL <i>[Signature]</i>	
HEAT TREATMENT		MANNED SPACECRAFT CENTER HOUSTON, TEXAS SCHEMATIC MAIN SCHEMATIC AMPL AND QUADRATURE REJECTION	
NEXT ASSY	USED ON	NASA APPROVAL <i>[Signature]</i>	CODE IDENT NO 80230 J DATE 2010058
APPLICATION	FINAL FINISH	WT APPROVAL <i>[Signature]</i>	SCALE WT SHEET 1 OF 1





REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377-30	RESISTOR	25 K	±0.1%	1/10 W
R2	-30				
R3	-30				
R4	-333				
R5	1006750-36		25.708K	±2%	1/4 W
R6	-36		1500	±2%	1/4 W
R7	-36				
R8	-36				
R9	-36				
R10	-36				
R11	-36				
R12	-36				
R13	-36				
R14	1010604-46		510	±1%	1 W
R15	1006750-56		0 K	±2%	1/4 W
R16	-56		0 K	±2%	1/4 W
R17	-60		15 K		
R18	-60				
R19	-60				
R20	-60				
R21	-60				
R22	-60				
R23	-56		10 K		
R24	-44		3300		
R25	-44				
R26	-44				
R27	-44				
R28	-44				
R29	-44				
R30	-44				
R31	-44				
R32	1010377-304		4000	±0.1%	1/10 W
R33	1010377-305		8000	±0.1%	
R34	1010733-6		8000	±1%	
R35	-6		15 K		
R36	-7		16 K		
R37	-7		16 K		
R38	-7		32 K		
R39	-9		2.6027K	±0.1%	
R40	1010377-303		1.9518K	±0.1%	
R41	1010377-302		865.9	±1%	
R42	1010733-16		409.5		
R43	-4		196.8		
R44	-3		97.70		
R45	-2		97.41		
R46	-1		128.146K	±0.1%	
R47	1010377-313		44.999 K		
R48	-311		30.067 K		
R49	-310		25.490 K		
R50	-308		25.190 K		
R51	-308		30.067 K		
R52	-310		44.999 K		
R53	-311		128.146 K		
R54	-313		125.796 K		
R55	-345		125.796 K		
R56	-345				
R57	-345				
R58	1010369-90		240 K	±5%	1/8 W
R59	1010369-90		240 K	±5%	1/8 W
R60	1010377-312		100 K	±0.1%	1/10 W
R61	1010377-312				
R62	1010733-11				
R63	-11				
R64	-11				
R65	-11				
R66	-11				
R67	-11				
R70	1010377-307		25 K	±0.1%	1/10 W
R71					
R72					
R73					
R74	1006750-56		10 K	±2%	1/4 W
R75	1010733-119		200K	±1%	1/10 W
R76	1006750-60		100K	±2%	1/4 W
R77	-73		51K		
R78	-39		2000		
R79	-63		20K		
R80	1010733-12		25K	±1%	1/10 W
R81	1010733-12		25K	±1%	1/10 W
R82	1010604-45		360	±1%	1/10 W
R83	1006750-73		51K	±2%	1/4 W
R84	-73		51K		
R85	-73		3300		
R86	1010604-39		2000	±1%	1 W
R87	1006750-32		1000	±2%	1/4 W
R88	-76		68K		
R89	-49		5100		
R90	-2		56		
R91	-49		5100		
R92	-49		8100		
R93	-56		10 K		
R94	-32		1000		
R95	-60		15 K		
R96	-32		1000		
R97	-76		68K		
R98	-49		5100		
R99	-49		5100		
R100	-2		56		
R101	-56		10 K		
R102	-49		5100		
R103	-32		1000		
R104	-32		1000		
R105	-32		1000		
R106	-59		13 K		
R107	-63		20K		
R108	-65		24K		
R109	-80		100 K		
R110	-80		56		
R111	-32		1000		
R112	1010369-105		1MEG	±5%	1/8 W
R113	1006750-84		150 K	±2%	1/4 W
R114	1010369-92		300K	±5%	1/8 W
R115	1006750-80		10 K	±2%	1/4 W
R116	-56		10 K		
R117	-8		100		
R118	-49		1000		
R119	-43		3000		
R120	-80		100K		
R121	1010369-112		2MEG	±5%	1/8 W
R122	-54		360K		
R123	-105		1MEG		
R124	1006750-80		100K	±2%	1/4 W
R125	-84		150 K		
R126	-37		1600		

2010058

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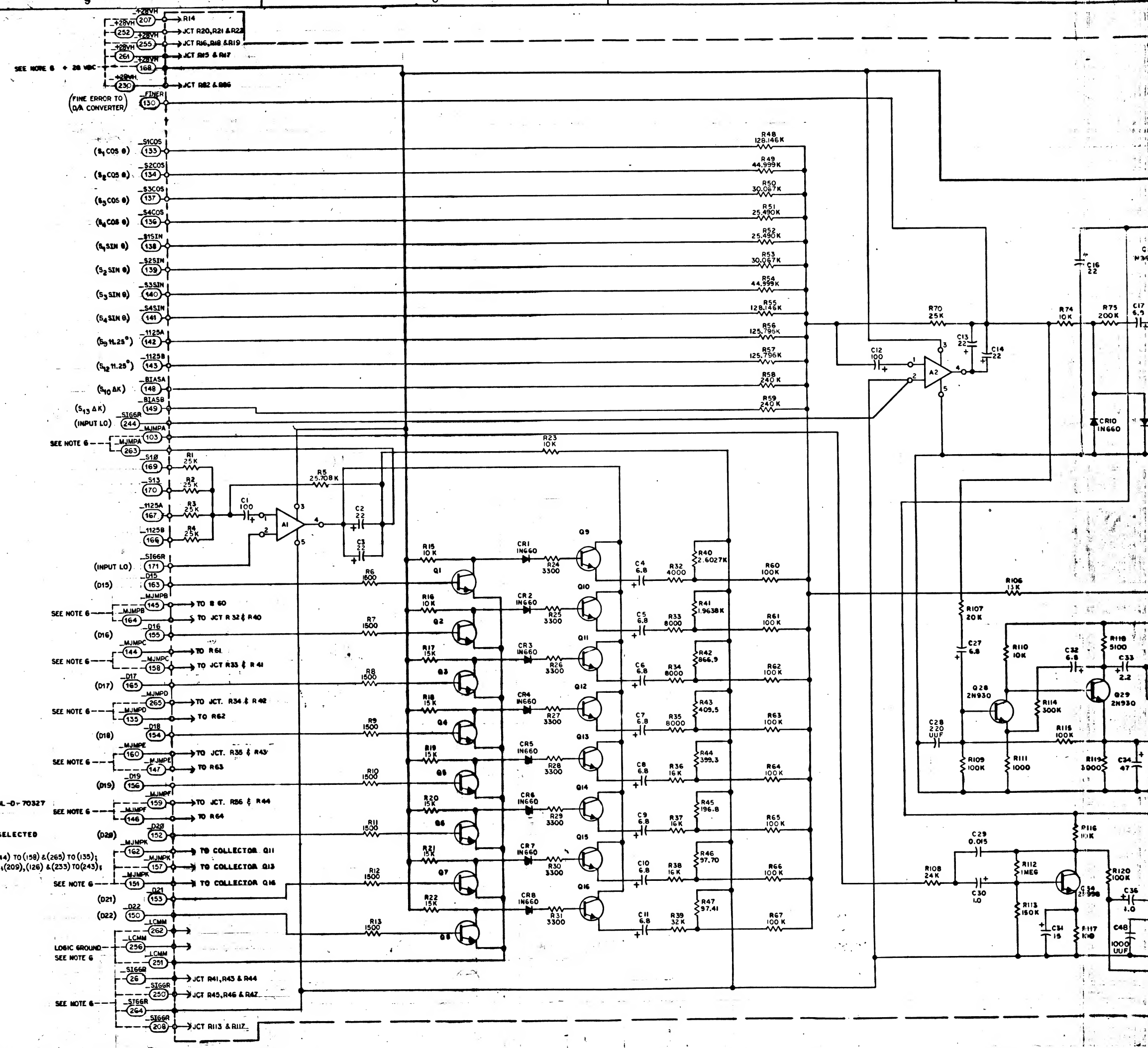
MASTER



1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
 3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
 4. SEE DRAWING NO. 2010019 FOR SCHEMATIC
 5. THE VALUE OF C22 TO BE SELECTED AT FINAL TEST. PART TO BE SELECTED FROM CHART A
 6. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (207), (252), (255), (261) & (168) TO (230); (103) TO (263); (145) TO (164); (144) TO (158) & (265) TO (135); (160) TO (147); (159) TO (146); (262) & (256) TO (251); (260), (250) & (264) TO (208); (209), (126) & (233) TO (243); (131) TO (102); (128) TO (132); (151) & (157) TO (162); (107) TO (227)

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
4. SEE DRAWING NO. 2010019 FOR SCHEMATIC
5. THE VALUE OF C22 TO BE SELECTED AT FINAL TEST. PART TO BE SELECTED FROM CHART A
6. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (207), (252), (255), (261) & (168) TO (230); (103) TO (263); (145) TO (164); (144) TO (158) & (265) TO (135); (160) TO (147); (159) TO (146); (262) & (256) TO (251); (260), (250) & (264) TO (208); (209), (126) & (233) TO (243); (131) TO (102); (128) TO (132); (151) & (157) TO (162); (107) TO (227)

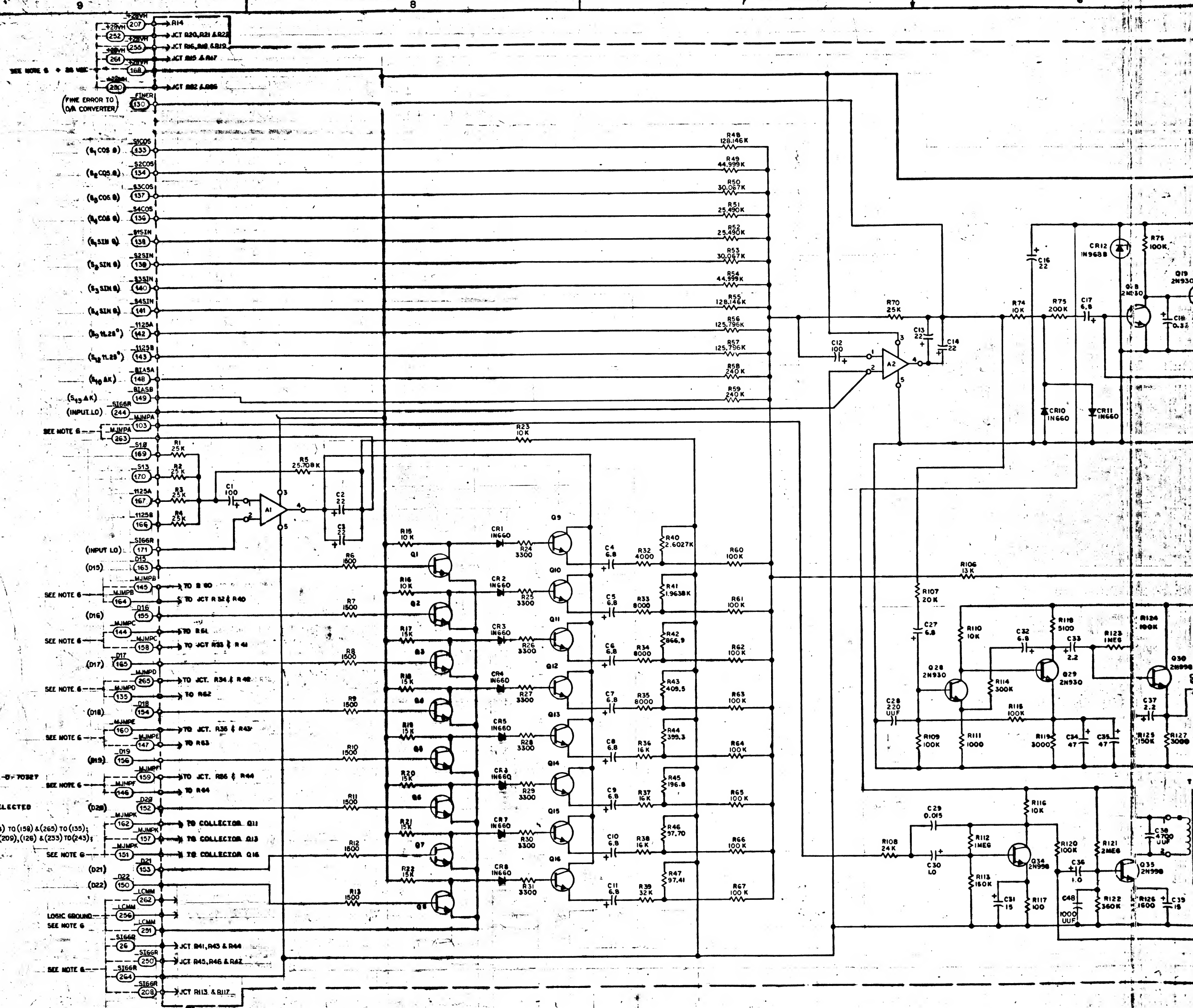




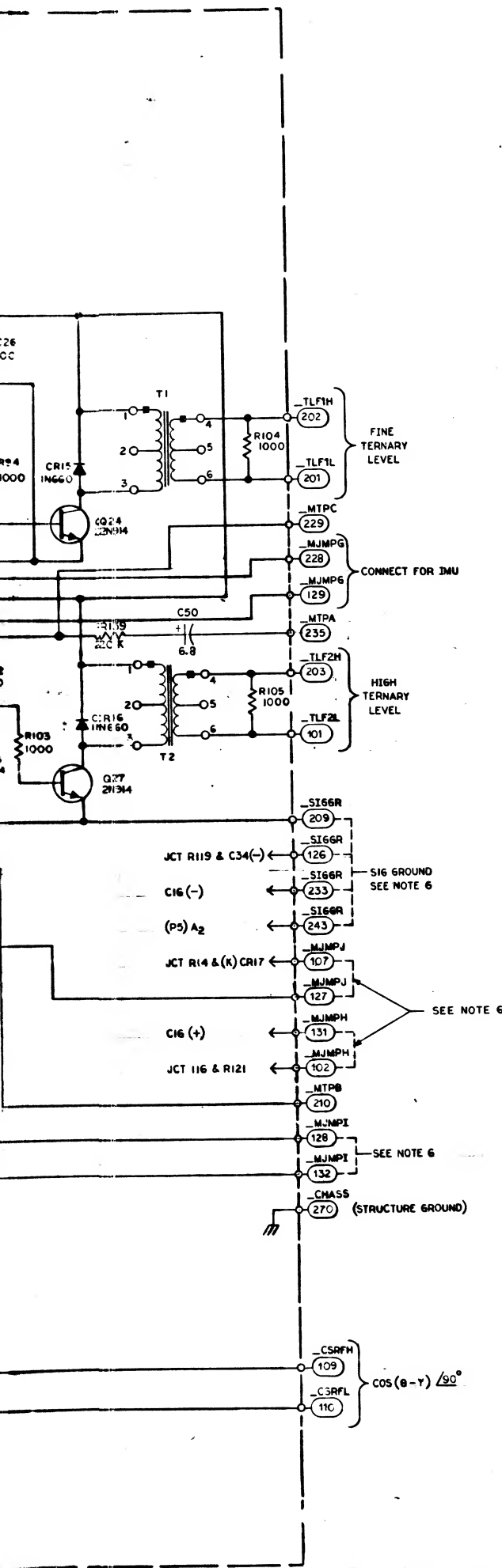
QTY 1	PART OR IDENTIFYING NO.	MANUFACTURE OR DESCRIPTION	FR NO.
LIST OF MATERIALS			
M1Y REGISTRATION LAB COMMERCIAL RESEARCH DIVISION 10000 HOUSTON, TEXAS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DESIGNED BY <i>W. J. ...</i> DRAWN BY <i>W. J. ...</i> CHECKED BY <i>W. J. ...</i> APPROVED BY <i>W. J. ...</i> APPROVAL <i>W. J. ...</i>		SCHEMATIC MAIN SUMMING AMPL AND QUADRATURE REJECTION	
NADA APPROVAL <i>W. J. ...</i> NADA APPROVAL <i>W. J. ...</i> NADA APPROVAL <i>W. J. ...</i>		CODE IDENT NO. SIZE 80230 J	NADA ORIGINING NO. 2010058
NIT APPROVAL <i>W. J. ...</i>		SCALE _____ WT _____ _____ OF _____	



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R127	1006750 - 43	RESISTOR	3000	1	1/4 W
R128	-67		30K		
R129	-60		15K		
R130	-49		5100		
R131	-80		100K		
R132	-49		5100		
R133	-56		10K		
R134	-84		150K		
R135	-80		100K		
R136	100369 - 105		1MEG	2.5	1/8 W
R137	106750 - 43		3000	2	1/4 W
R138	106750 - 43		3000	2	1/4 W
R139	1006750 - 63		35K	2	1/4 W
C1	1006755 - 14	CAPACITOR	.00	10	100 VDC
C2	-85		.22		35 VDC
C3	-85		.22		
C4	-79		9.8		
C5	-79				
C6	-79				
C7	-79				
C8	-79				
C9	-79				
C10	-79				
C11	-79				
C12	-14		100		10 VDC
C13	-85		.22		35 VDC
C14	-85		.22		
C16	-85		.22		
C17	-79		6.8		
C18	-63		0.33		
C19	1006777 - 20		470 UUF		100 VDC
C20	1006755 - 73		.22		35 VDC
C21	1010317 - 4		.130	2.1	30 VDC
C22	SEE NOTE 5		—	2.10	35 VDC
C23	1006755 - 81		.10		35 VDC
C24	-81		.10		
C25	-69		1.0		
C26	-14		100		10 VDC
C27	-79		6.8		35 VDC
C28	1006777 - 16		220 UUF		100 VDC
C29	1006777 - 39		0.015		100 VDC
C30	1006755 - 69		1.0		35 VDC
C31	-33		.15		20 VDC
C32	-79		6.8		35 VDC
C33	-73		2.2		35 VDC
C34	-36		4.7		20 VDC
C35	-36		4.7		20 VDC
C36	-69		1.0		35 VDC
C37	-73		2.2		35 VDC
C38	1006777 - 28		4700 UUF		100 VDC
C39	1006755 - 33		.15		20 VDC
C40	-79		6.8		35 VDC
C41	-79		6.8		35 VDC
C42	-10		4.7		10 VDC
C43	-10		4.7		10 VDC
C44	-73		2.2		35 VDC
C45	-73		2.2		
C46	-79		6.8		
C47	1006777 - 26		2200 UUF		100 VDC
C48	1006777 - 24		1000 UUF		100 VDC
C49	1006755 - 85		.22		35 VDC
C50	1006755 - 79		6.8		35 VDC
CR1	1010385	DIODE	1N660		
CR2					
CR3					
CR4					
CR5					
CR6					
CR7					
CR8	1010386				
CR10	1010385		1N660		
CR11	1010385		1N660		
CR12	1010830 - 12		1N968 B		
CR13	1010830 - 7		1N968 B		
CR14	1010372 - 13				
CR15	1010385		1N660		
CR16	1010385		1N660		
CR17	1010830 - 9		1N968 B		
Q1	1010343 - 3	TRANSISTOR			
Q2					
Q3					
Q4					
Q5					
Q6					
Q7					
Q8					
Q9					
Q10					
Q11					
Q12					
Q13					
Q14					
Q15					
Q16	1010343 - 3				
Q18	1010397 - 1		2N930		
Q19	-1				
Q20	-1				
Q21	1010342		2N930		
Q22	1010532 - 1		2N2980		
Q23	1006752		2N314		
Q24	1002752		1N914		
Q25	1010632 - 1		2N2980		
Q26	1006752		2N934		
Q27	1006752		2N314		
Q28	1010397 - 1		2N930		
Q29	1010397 - 1		2N2930		
Q30	1010342		2N528		
Q31	1010367		3N68		
Q32	1010367		3N68		
Q33	1010342		2N998		
Q34					
Q35					
A1	2007144	AMPLIFIER	SEE NOTE 4		
A2	2007144	AMPLIFIER	SEE NOTE 4		
T1	1010274	TRANSFORMER			
T2	1010274				



NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-STD-20027
2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
4. SEE DRAWING NO. 2010019 FOR SCHEMATIC
5. THE VALUE OF C22 IS TO BE SELECTED AT FINAL TEST. PART TO BE SELECTED FROM CHART A
6. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (207), (252), (255), (261) & (168) TO (230); (103) TO (263); (145) TO (164); (144) TO (159) & (265) TO (135); (160) TO (147); (159) TO (146); (262) & (256) TO (251); (260), (250) & (264) TO (208); (209), (126) & (233) TO (243); (131) TO (102); (128) TO (132); (151) & (157) TO (162); (107) TO (127)



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377-307	RESISTOR	25 K	± 0.1 %	1/10 W
R2	-307				
R3	-307				
R4	-307				
R5	-333		25.708K	± 2 %	1/4 W
R6	1006750-36		1500	± 2 %	1/4 W
R7	-36				
R8	-36				
R9	-36				
R10	-36				
R11	-36				
R12	-36				
R13	-36				
R14	1010604-46		510	± 1 %	1 W
R15	1006750-56		10 K	± 2 %	1/4 W
R16	-56				
R17	-60		15 K		
R18	-60				
R19	-60				
R20	-60				
R21	-60				
R22	-60				
R23	-56		10 K		
R24	-44		3300		
R25	-44				
R26	-44				
R27	-44				
R28	-44				
R29	-44				
R30	-44				
R31	-44				
R32	1010377-304		4.000	± 0.1 %	1/10 W
R33	1010377-305		8000	± 0.1 %	
R34	1010733-6		8000	± 1 %	
R35	-6		16 K		
R36	-7		16 K		
R37	-7		16 K		
R38	-7		16 K		
R39	-9		32 K		
R40	1010377-303		2.6027 K	± 0.1 %	
R41	1010377-302		1.9638 K	± 0.1 %	
R42	1010733-18		866.9	± 1 %	
R43	-5		409.5		
R44	-4		399.3		
R45	-3		196.8		
R46	-2		97.70		
R47	-1		97.41		
R48	1010377-313		128.146K	± 0.1 %	
R49	-311		44.999 K		
R50	-310		30.067 K		
R51	-308		25.490 K		
R52	-308		25.490 K		
R53	-310		30.067 K		
R54	-311		44.999 K		
R55	-313		128.146 K		
R56	-347		125.500K		
R57	-347		125.500K		
R58	1010369-90		240 K	± 5 %	1/8 W
R59	1010369-90		240 K	± 5 %	1/8 W
R60	1010377-312		100 K	± 0.1 %	1/10 W
R61	1010377-312		100 K	± 0.1 %	1/10 W
R62	1010733-11		51 K	± 1 %	
R63	-11				
R64	-11				
R65	-11				
R66	-11				
R67	-11				
R70	1010377-307		25 K	± 0.1 %	1/10 W
R71					
R72					
R73					
R74	1006750-56		10 K	± 2 %	1/4 W
R75	1010733-119		200K	± 1 %	1/10 W
R76	1006750-80		100K	± 2 %	1/4 W
R77	-73		51 K		
R78	-39		2000		
R79	-63		20 K		
R80	1010733-12		25 K	± 1 %	1/10 W
R81	1010733-12		25 K	± 1 %	1/10 W
R82	1010604-45		360	± 1 %	1 W
R83	1006750-73		51 K	± 2 %	1/4 W
R84	-73		51 K		
R85	-44		3300		
R86	1010604-39		2000	± 1 %	1 W
R87	1006750-32		1000	± 2 %	1/4 W
R88	-76		68K		
R89	-49		5100		
R90	-2		56		
R91	-49		5100		
R92	-49		5100		
R93	-56		10 K		
R94	-32		1000		
R95	-60		15 K		
R96	-32		1000		
R97	-76		68K		
R98	-49		5100		
R99	-49		5100		
R100	-2		56		
R101	-56		10 K		
R102	-49		5100		
R103	-32		1000		
R104	-32		1000		
R105	-32		1000		
R106	-59		13 K		
R107	-63		20K		
R108	-65		24K		
R109	-80		100K		
R110	-56		10 K		
R111	-32		1000		
R112	1010369-105		1MEG	± 5 %	1/8 W
R113	1006750-84		150 K	± 2 %	1/4 W
R114	1010369-92		300K	± 5 %	1/8 W
R115	1006750-80		100 K	± 2 %	1/4 W
R116	-56		10 K		
R117	-8		100		
R118	-49		5100		
R119	-43		3000		
R120	-80		100K		
R121	1010369-112		2MEG	± 5 %	1/8 W
R122	-94		360K		
R123	-105		1MEG		
R124	1006750-80		100K	± 2 %	1/4 W
R125	-84		150 K		
R126	-37		1600		

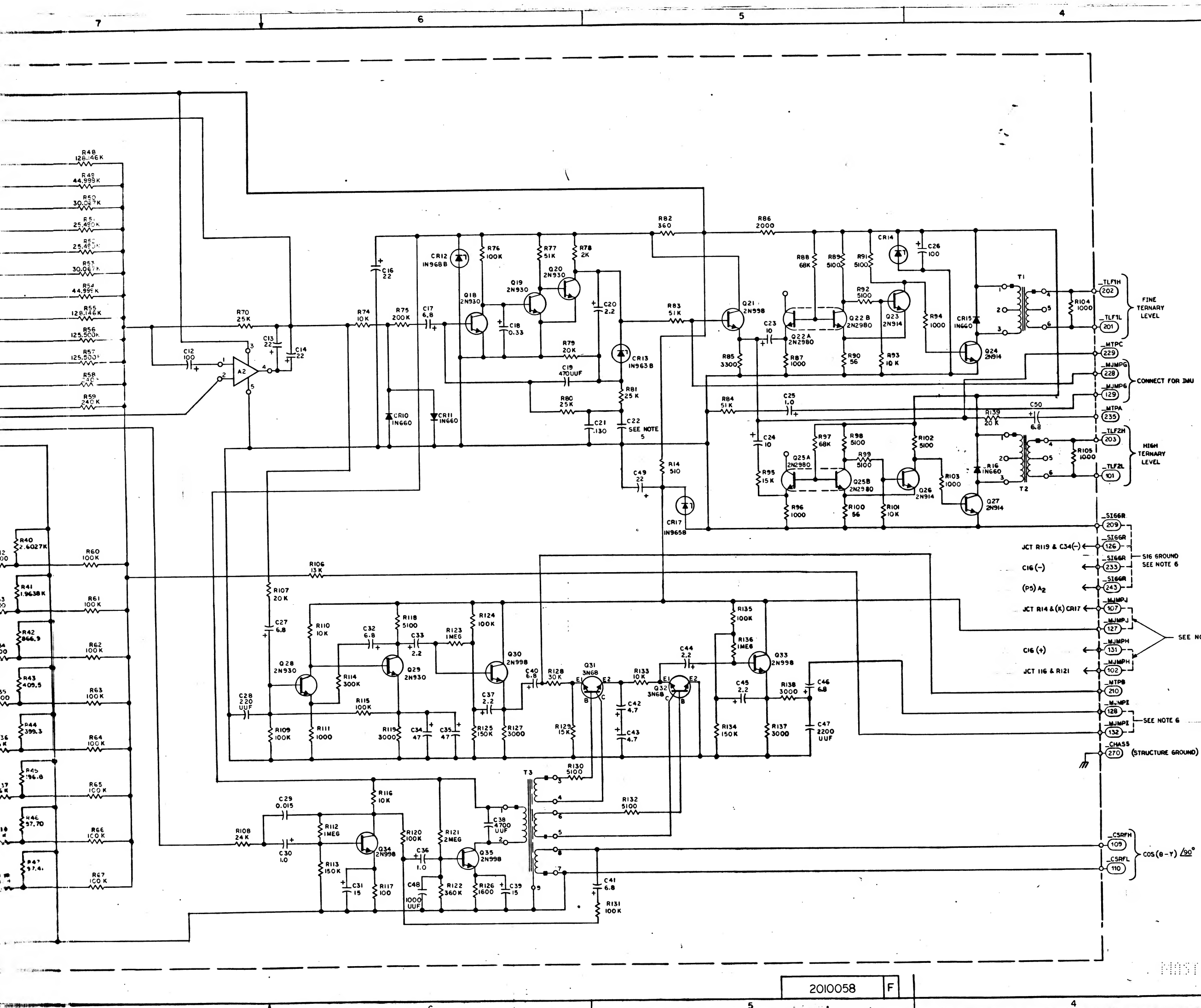
REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R127	1006750-43	RESISTOR	3000	± 2 %	1/4 W
R128	-67		30 K		
R129	-60		15 K		
R130	-49		5100		
R131	-80		100 K		
R132	-49		5100		
R133	-56		10 K		
R134	-84		150 K		
R135	-80		100 K		
R136	1010369-105		1MEG	± 5 %	1/8 W
R137	1006750-43		3000	± 2 %	1/4 W
R138	1006750-43		3000	± 2 %	1/4 W
R139	1006750-63		20 K	± 2 %	1/4 W
C1	1006755-14	CAPACITOR	100	± 10 %	10 VDC
C2	-85		22		35 VDC
C3	-85		22		
C4	-79		6.8		
C5	-79				
C6	-79				
C7	-79				
C8	-79				
C9	-79				
C10	-79				
C11	-79				
C12	-14		100		10 VDC
C13	-85		22		35 VDC
C14	-85		22		
C16	-85		22		
C17	-79		6.8		
C18	-63		0.33		
C19	1006777-20		470 UUF		100VDC
C20	1006755-73		2.2		35 VDC
C21	1010317-4		.130	± 1 %	30 VDC
C22	SEE NOTE 5			± 10 %	100VDC
C23	1006755-81		10		35 VDC
C24	-81		10		
C25	-69		1.0		
C26	-14		100		10 VDC
C27	-79		6.8		35 VDC
C28	1006777-16		220 UUF		100VDC
C29	1006777-39		0.015		100VDC
C30	1006755-69		1.0		35 VDC
C31	-33		15		20 VDC
C32	-79		6.8		35 VDC
C33	-73		2.2		35 VDC
C34	-36		47		20 VDC
C35	-36		47		20 VDC
C36	-69		1.0		35 VDC
C37	-73		2.2		35 VDC
C38	1006777-28		4700 UUF		100VDC
C39	1006755-33		15		20 VDC
C40	-79		6.8		35 VDC
C41	-79		6.8		35 VDC
C42	-10		4.7		10 VDC
C43	-10		4.7		10 VDC
C44	-73		2.2		35 VDC
C45	-73		2.2		
C46	-79		6.8		100 VDC
C47	1006777-26		2200 UUF		100VDC
C48	1006777-24		1000 UUF		100VDC
C49	1006755-85		2.2		35 VDC
C50	1006755-79		6.8		35 VDC
CR1	1010385	DIODE	IN660		
CR2					
CR3					
CR4					
CR5					
CR6					
CR7					
CR8	1010385				
CR10	1010385		IN660		
CR11	1010385		IN660		
CR12	1010830-12		IN968B		
CR13	1010830-7		IN968B		
CR14	1010372-13		IN660		
CR15	1010385		IN660		
CR16	1010385		IN660		
CR17	1010830-9		IN968B		
Q1	1010343-3	TRANSISTOR			
Q2					
Q3					
Q4					
Q5					
Q6					
Q7					
Q8					
Q9					
Q10					
Q11					
Q12					
Q13					
Q14					
Q15					
Q16	1010343-3				
Q18	1010397-1		2N930		
Q19	-1				
Q20	-1				
Q21	1010342		2N998		
Q22	1010652-1		2N2980		
Q23	1010966-1		2N914		
Q24	1010966-1		2N914		
Q25	1010652-1		2N2980		
Q26	1010966-1		2N914		
Q27	1010966-1		2N914		
Q28	1010397-1		2N930		
Q29	1010397-1		2N930		
Q30	1010342		2N998		
Q31	1010367		3N68		
Q32	1010367		3N68		
Q33	1010342		2N998		
Q35					
A1	2007144	AMPLIFIER	SEE NOTE 4		
A2	2007144	AMPLIFIER	SEE NOTE 4		
T1	1010274	TRANSFORMER			
T2	1010274				
T3	1010274				

PART NO.	VALUE
1006777-24	1000 UUF
-25	2000 UUF
-26	200 UUF
-27	3300 UUF
-28	4700 UUF
-29	5000 UUF
-30	6800 UUF
-31	0.01

QTY REQD		PART OR IDENTIFYING NO		NOMENCLATURE OR DESCRIPTION		FINO NO
LIST OF MATERIALS						
<div style="display: flex; justify-content: space-between;"> <div> <p>INSTRUMENTATION LAB</p> <p>HOUSTON, TEXAS</p> <p>SCHEMATIC</p> <p>MAIN SUMMING AMPL AND</p> <p>QUADRATURE REJECTION</p> <p>80230 J</p> <p>2010058</p> </div> <div> <p>DATE: 1/1/66</p> <p>APPROVAL: [Signature]</p> <p>SCALE: 1/1</p> </div> </div>						

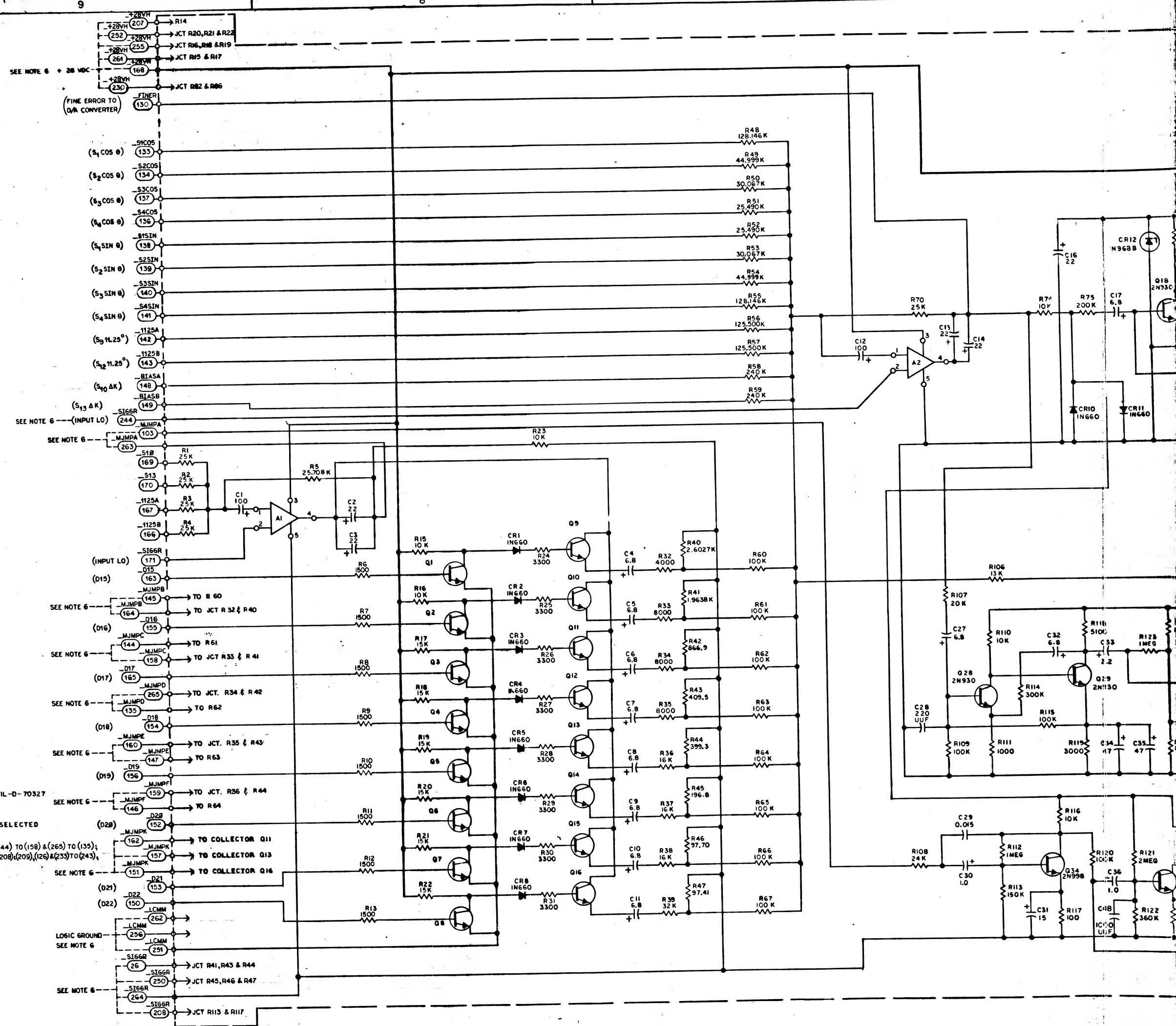
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C	REVISED PER TDRR 16620	1/1/66	[Signature]
D	REVISED PER TDRR 17977	1/1/66	[Signature]
E	REVISED PER TDRR 18294	1/1/66	[Signature]
F	REVISED PER TDRR 20774	1/1/66	[Signature]

2010058 F



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377-307	RESISTOR	25 K	± 0.1%	1/10 W
R2	-30				
R3	-30				
R4	-307				
R5	-333		25.708K		
R6	1006750-36		1500	± 2%	1/4 W
R7	-36				
R8	-36				
R9	-36				
R10	-36				
R11	-36				
R12	-36				
R13	-36				
R14	1010604-46		510	± 1%	1 W
R15	1006750-56		0 K	± 2%	1/4 W
R16	-56		10 K		
R17	-60		15 K		
R18	-60				
R19	-60				
R20	-60				
R21	-60				
R22	-60				
R23	-60		10 K		
R24	-44		3300		
R25	-44				
R26	-44				
R27	-44				
R28	-44				
R29	-44				
R30	-44				
R31	-44				
R32	1010377-304		4000	± 0.1%	1/10 W
R33	1010377-305		8000	± 0.1%	
R34	1010733-6		3000	± 1%	
R35	-7		16 K		
R36	-7		16 K		
R37	-7		32 K		
R38	-7		2.6027 K	± 0.1%	
R39	1010377-303		1.9618 K	± 0.1%	
R40	1010377-302		365.3	± 1%	
R41	1010733-18		409.5		
R42	-5		199.3		
R43	-4		97.70		
R44	-3		97.41		
R45	-2		128.146 K	± 0.1%	
R46	-1		44.999 K		
R47	1010377-313		30.067 K		
R48	-311		25.490 K		
R49	-310		30.067 K		
R50	-308		44.999 K		
R51	-308		125.500 K		
R52	-310		125.500 K		
R53	-311		125.500 K		
R54	-313		240 K	± 5%	1/8 W
R55	-347		240 K	± 5%	1/8 W
R56	-347		100 K	± 0.1%	1/10 W
R57	-347		100 K	± 0.1%	1/10 W
R58	1010369-90		25 K	± 0.1%	1/10 W
R59	1010369-90		25 K	± 0.1%	1/10 W
R60	1010377-312		25 K	± 0.1%	1/10 W
R61	1010377-312		25 K	± 0.1%	1/10 W
R62	1010733-11		25 K	± 0.1%	1/10 W
R63	-11				
R64	-11				
R65	-11				
R66	-11				
R67	-11				
R70	1010377-307		25 K	± 0.1%	1/10 W
R71	-307				
R72	-307				
R73	-307				
R74	1006750-56		10 K	± 2%	1/4 W
R75	1010733-119		200 K	± 1%	1/10 W
R76	1006750-80		100 K	± 2%	1/4 W
R77	-73		51 K		
R78	-38		2000		
R79	-63		20 K		
R80	1010733-12		25 K	± 1%	1/10 W
R81	1010733-12		25 K	± 1%	1/10 W
R82	1010604-45		360	± 1%	1 W
R83	1006750-73		51 K	± 2%	1/4 W
R84	-73		51 K		
R85	-44		3300		
R86	1010604-39		2000	± 1%	1 W
R87	1006750-32		1000	± 2%	1/4 W
R88	-76		68 K		
R89	-49		5100		
R90	-2		56		
R91	-49		5100		
R92	-49		5100		
R93	-56		10 K		
R94	-32		1000		
R95	-60		15 K		
R96	-32		1000		
R97	-76		68 K		
R98	-49		5100		
R99	-49		5100		
R100	-2		56		
R101	-56		10 K		
R102	-49		5100		
R103	-32		1000		
R104	-32		1000		
R105	-32		1000		
R106	-59		13 K		
R107	-63		20 K		
R108	-65		24 K		
R109	-80		100 K		
R110	-56		1000		
R111	-32		1000		
R112	1010369-105		1 MEG	± 5%	1/4 W
R113	1006750-84		150 K	± 2%	1/4 W
R114	1010369-92		300 K	± 5%	1/4 W
R115	1006750-80		100 K	± 2%	1/4 W
R116	-56		10 K		
R117	-8		100		
R118	-49		5100		
R119	-43		3000		
R120	-80		100 K		
R121	1010369-112		2 MEG	± 5%	1/8 W
R122	-94		360 K		
R123	-105		MEG		
R124	1006750-80		100 K	± 2%	1/4 W
R125	-84		150 K		
R126	-37		1600		

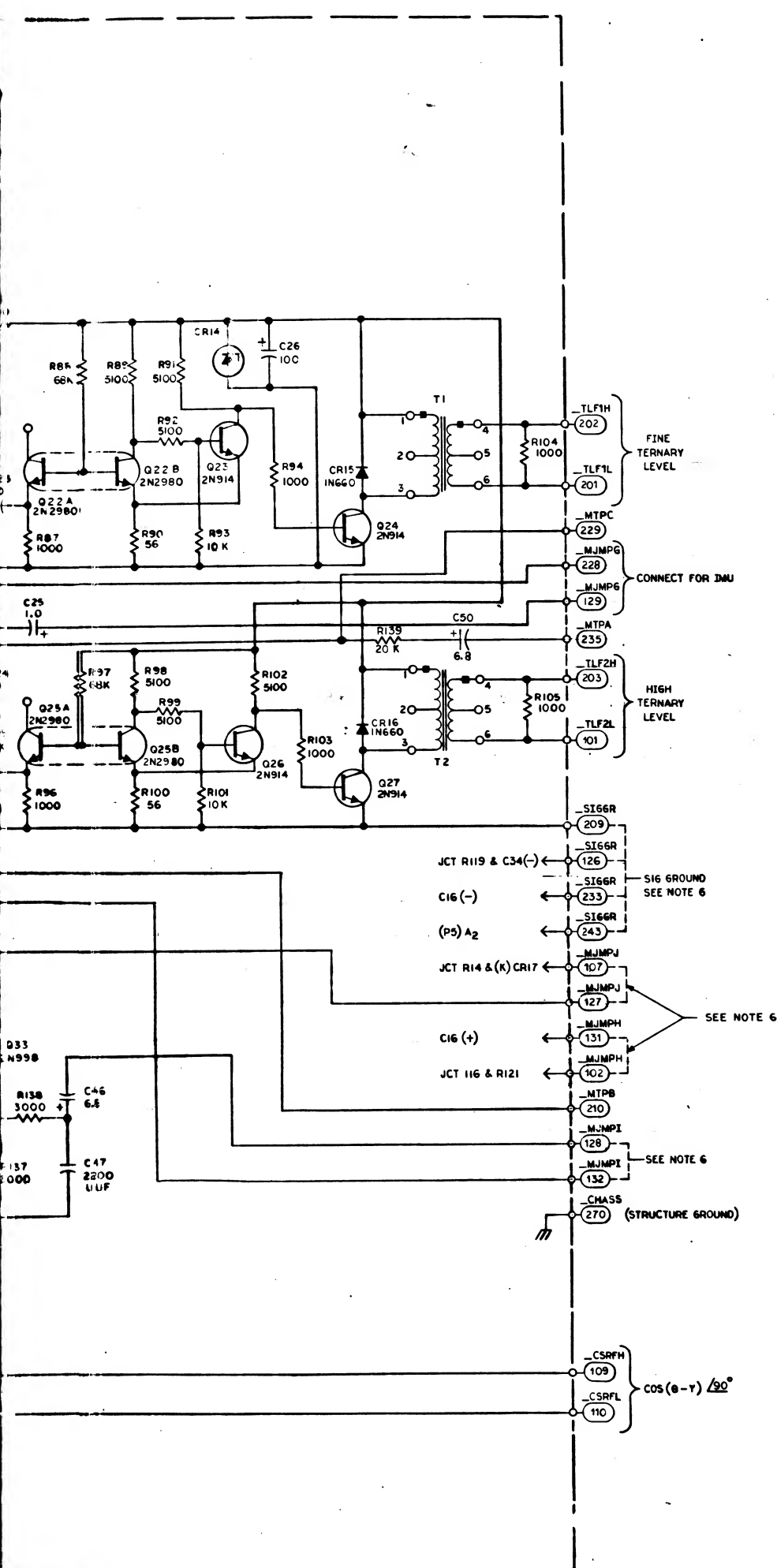
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
 3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
 4. SEE DRAWING NO. 2010019 FOR SCHEMATIC
 5. THE VALUE OF C22 TO BE SELECTED AT FINAL TEST, PART TO BE SELECTED FROM CHART A
 6. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (207), (252), (255), (261), (168) TO (230); (103) TO (263); (145) TO (164) & (265) TO (135); (160) TO (147); (159) TO (146); (262) & (236) TO (251); (260), (250), (244) & (264) TO (208); (209), (126) & (233) TO (243); (131) TO (102); (128) TO (132); (151) & (157) TO (162); (107) TO (127)



- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
 3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
 4. SEE DRAWING NO. 2010019 FOR SCHEMATIC
 5. THE VALUE OF C22 TO BE SELECTED AT FINAL TEST, PART TO BE SELECTED FROM CHART A
 6. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (207), (252), (255), (261), (168) TO (230); (103) TO (263); (145) TO (164) & (265) TO (135); (160) TO (147); (159) TO (146); (262) & (236) TO (251); (260), (250), (244) & (264) TO (208); (209), (126) & (233) TO (243); (131) TO (102); (128) TO (132); (151) & (157) TO (162); (107) TO (127)

9 8900102

REV	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TORR 14626	11/85	WJH
B	REVISED PER TORR 15945	1/86	WJH
C	REVISED PER TORR 16620	8/86	WJH
D	REVISED PER TORR 17977	1/87	WJH
E	REVISED PER TORR 18294	5/87	WJH
F	REVISED PER TORR 20774	8/87	WJH
G	REVISED PER TORR 22515	12/87	WJH



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377-307	RESISTOR	25 K	± 0.1%	1/10 W
R2	-307				
R3	-307				
R4	-307				
R5	-307				
R6	1006750-36		25.708K	± 2%	1/4 W
R7	-36		1500		
R8	-36				
R9	-36				
R10	-36				
R11	-36				
R12	-36				
R13	-36				
R14	1010604-46		510	± 1%	1 W
R15	1006750-56		10 K	± 2%	1/4 W
R16	-56		10 K		
R17	-60		15 K		
R18	-60				
R19	-60				
R20	-60				
R21	-60				
R22	-56		10 K		
R23	-44		3300		
R24	-44				
R25	-44				
R26	-44				
R27	-44				
R28	-44				
R29	-44				
R30	-44				
R31	-44				
R32	1010377-304		4000	± 0.1%	1/10 W
R33	1010377-305		8000	± 0.1%	
R34	1010733-6		8000	± 1%	
R35	-6		16 K		
R36	-7		16 K		
R37	-7		16 K		
R38	-7		16 K		
R39	1010377-303		2.6027 K	± 0.1%	
R40	1010377-302		1.9638 K	± 0.1%	
R41	1010733-18		866.9	± 1%	
R42	-5		409.5		
R43	-4		399.3		
R44	-3		196.8		
R45	-2		97.41		
R46	-2		97.41		
R47	1010377-313		128.146 K	± 0.1%	
R48	-311		44.999 K		
R49	-310		30.067 K		
R50	-308		25.490 K		
R51	-308		25.490 K		
R52	-310		30.067 K		
R53	-311		44.999 K		
R54	-313		128.146 K		
R55	-347		125.500 K		
R56	-347		125.500 K		
R57	-347		125.500 K		
R58	1010369-90		240 K	± 5%	1/8 W
R59	1010369-90		240 K	± 5%	1/8 W
R60	1010377-312		100 K	± 0.1%	1/10 W
R61	1010377-312				
R62	1010733-11				
R63	-11				
R64	-11				
R65	-11				
R66	-11				
R67	-11				
R70	1010377-307		25 K	± 0.1%	1/10 W
R71					
R72					
R73					
R74	1006750-56		10 K	± 2%	1/4 W
R75	1010733-119		200 K	± 1%	1/10 W
R76	1006750-80		100 K	± 2%	1/4 W
R77	-73		51 K		
R78	-39		2000		
R79	-63		20 K		
R80	1010733-12		25 K	± 1%	1/10 W
R81	1010733-12		25 K	± 1%	1/10 W
R82	1010604-45		360	± 1%	1 W
R83	1006750-73		51 K	± 2%	1/4 W
R84	-73		51 K		
R85	-44		3300		
R86	1010604-39		2000	± 1%	1 W
R87	1006750-32		1000	± 2%	1/4 W
R88	-76		68 K		
R89	-49		5100		
R90	-2		56		
R91	-49		5100		
R92	-49		5100		
R93	-56		10 K		
R94	-32		1000		
R95	-60		15 K		
R96	-32		1000		
R97	-76		68 K		
R98	-49		5100		
R99	-49		5100		
R100	-2		56		
R101	-56		10 K		
R102	-49		5100		
R103	-32		1000		
R104	-32		1000		
R105	-32		1000		
R106	-59		13 K		
R107	-63		20 K		
R108	-65		24 K		
R109	-80		100 K		
R110	-56		10 K		
R111	-32		1000		
R112	1010369-105		1 MEG	± 5%	1/8 W
R113	1006750-84		150 K	± 2%	1/4 W
R114	1010369-92		300 K	± 5%	1/8 W
R115	1006750-80		100 K	± 2%	1/4 W
R116	-56		10 K		
R117	-8		100		
R118	-49		5100		
R119	-43		3000		
R120	-80		100 K		
R121	1010369-112		2 MEG	± 5%	1/8 W
R122	-94		360 K		
R123	-105		1 MEG		
R124	1006750-80		100 K	± 2%	1/4 W
R125	-84		150 K		
R126	-37		1500		

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R127	1006750-43	RESISTOR	3000	± 2%	1/4 W
R128	-67		30 K		
R129	-60		15 K		
R130	-49		5100		
R131	-80		100 K		
R132	-49		5100		
R133	-56		10 K		
R134	-84		150 K		
R135	-80		100 K		
R136	1010369-105		1 MEG	± 5%	1/8 W
R137	1006750-43		3000	± 2%	1/4 W
R138	1006750-43		3000	± 2%	1/4 W
R139	1006750-63		20 K	± 2%	1/4 W
C1	1006755-14	CAPACITOR	100	± 10%	10 VDC
C2	-85		22		35 VDC
C3	-85		22		
C4	-79		6.8		
C5	-79				
C6	-79				
C7	-79				
C8	-79				
C9	-79				
C10	-79				
C11	-79				
C12	-14		100		10 VDC
C13	-85		22		35 VDC
C14	-85		22		
C16	-85		22		
C17	-79		6.8		
C18	1006777-63		0.33		
C19	1010359-31		470 UUF	± 5%	200 VDC
C20	1006755-73		2.2	± 10%	35 VDC
C21	1010317-4		1.30	± 1%	30 VDC
C22	SEE NOTE 5				
C23	1006755-81		10	± 10%	100 VDC
C24	-81		10		
C25	-69		1.0		
C26	-14		100		10 VDC
C27	-79		6.8		35 VDC
C28	1006777-16		220 UUF		100 VDC
C29	1006755-39		0.015		100 VDC
C30	1006755-69		1.0		35 VDC
C31	-33		15		20 VDC
C32	-79		6.8		35 VDC
C33	-73		2.2		35 VDC
C34	-36		47		20 VDC
C35	-36		47		20 VDC
C36	-69		1.0		35 VDC
C37	-73		2.2		35 VDC
C38	1006777-28		4700 UUF		100 VDC
C39	1006755-33		15		20 VDC
C40	-79		6.8		35 VDC
C41	-79		6.8		35 VDC
C42	-10		4.7		10 VDC
C43	-10		4.7		10 VDC
C44	-73		2.2		35 VDC
C45	-73		2.2		
C46	-79		6.8		
C47	1006777-26		2200 UUF		100 VDC
C48	1006777-24		1000 UUF		100 VDC
C49	1006755-85		22		35 VDC
C50	1006755-79		6.8		35 VDC
CR1	1010385	DIODE	IN660		
CR2					
CR3					
CR4					
CR5					
CR6					
CR7					
CR8	1010385				
CR10	1010385		IN660		
CR11	1010385		IN660		
CR12	1010830-12		IN968B		
CR13	1010830-7		IN968B		
CR14	1010372-18		IN660		
CR15	1010385		IN660		
CR16	1010385		IN660		
CR17	1010830-9		IN968B		
Q1	1010343-3	TRANSISTOR			
Q2					
Q3					
Q4					
Q5					
Q6					
Q7					
Q8					
Q9					
Q10					
Q11					
Q12					
Q13					
Q14					
Q15					
Q16	1010343-3				
Q18	1010397-1		2N930		
Q19	-1				
Q20	-1				
Q21	1010342		2N998		
Q22	1010652-1		2N2980		
Q23	1010966-1		2N914		
Q24	1010966-1		2N914		
Q25	1010652-1		2N2980		
Q26	1010966-1		2N914		
Q27	1010966-1		2N914		
Q28	1010397-1		2N930		
Q29	1010397-1		2N930		
Q30	1010342		2N998		
Q31	1010367		3N68		
Q32	1010367		3N68		
Q33	1010342		2N998		
Q34					
Q35					
A1	2007144	AMPLIFIER	SEE NOTE 4		
A2	2007144	AMPLIFIER	SEE NOTE 4		
T1	1010274	TRANSFORMER			
T2	1010274				
T3	1010274				

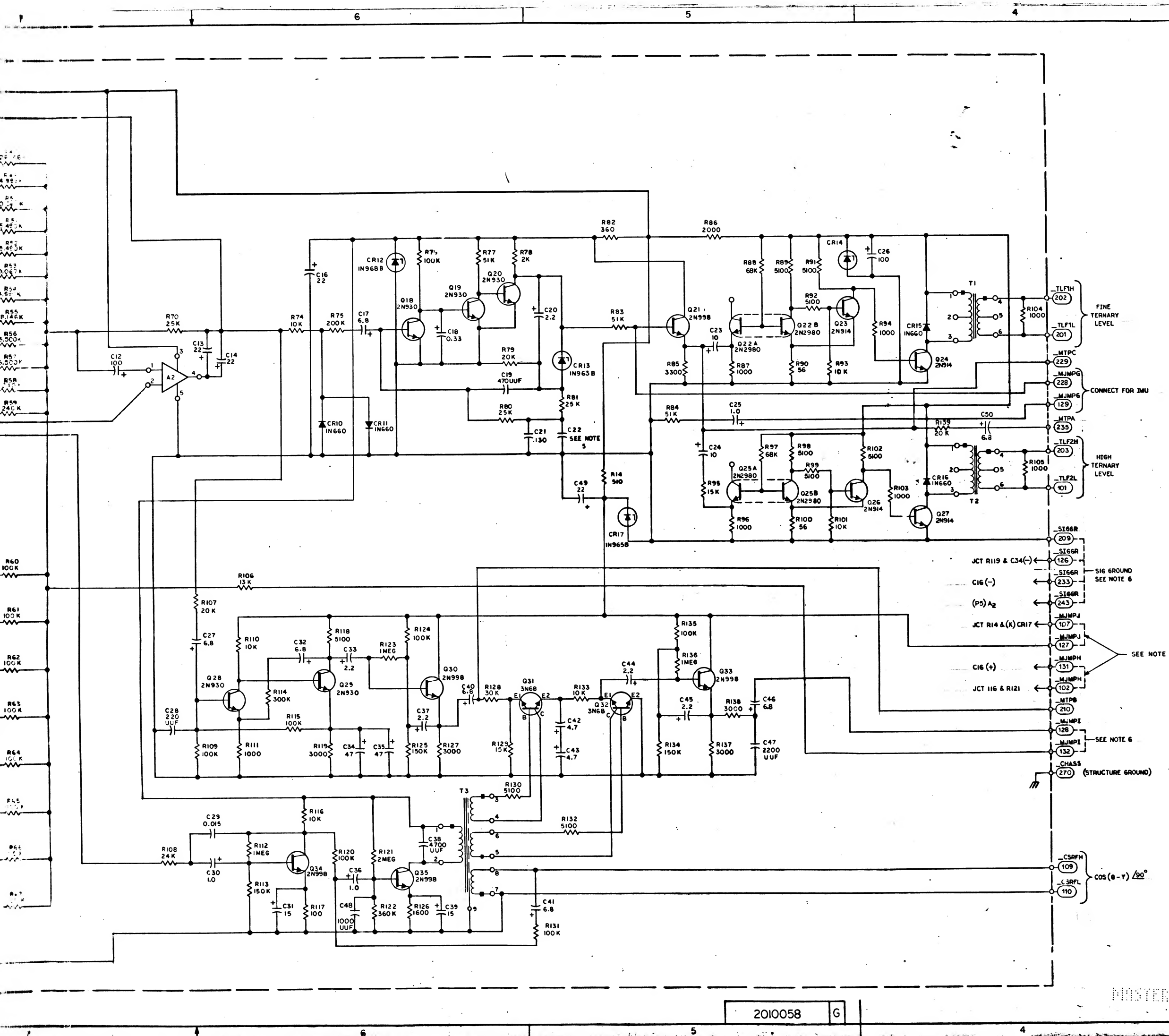
CHART A
C22

PART NO.	VALUE
1006777-24	1000 UUF
-25	2000 UUF
-26	200 UUF
-27	5300 UUF
-28	4700 UUF
-29	5000 UUF
-30	6800 UUF
-31	0.10

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	PRD NO.
LIST OF MATERIALS			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES DO NOT SCALE THIS DRAWING MATERIAL HEAT TREATMENT FINISH APPLICATION			
INSTRUMENTATION LAB COMMISSIONED WORK DRAWN BY: [Signature] CHECKED BY: [Signature] APPROVAL BY: [Signature]		MANHATTAN SPACECRAFT CENTER HOUSTON, TEXAS SCHEMATIC MAIN SUMMING AMPL AND QUADRATURE REJECTION NASA DRAWING NO. 80230 J 2010058 SCALE: [Blank] WT: [Blank] SHEET 1 OF 1	

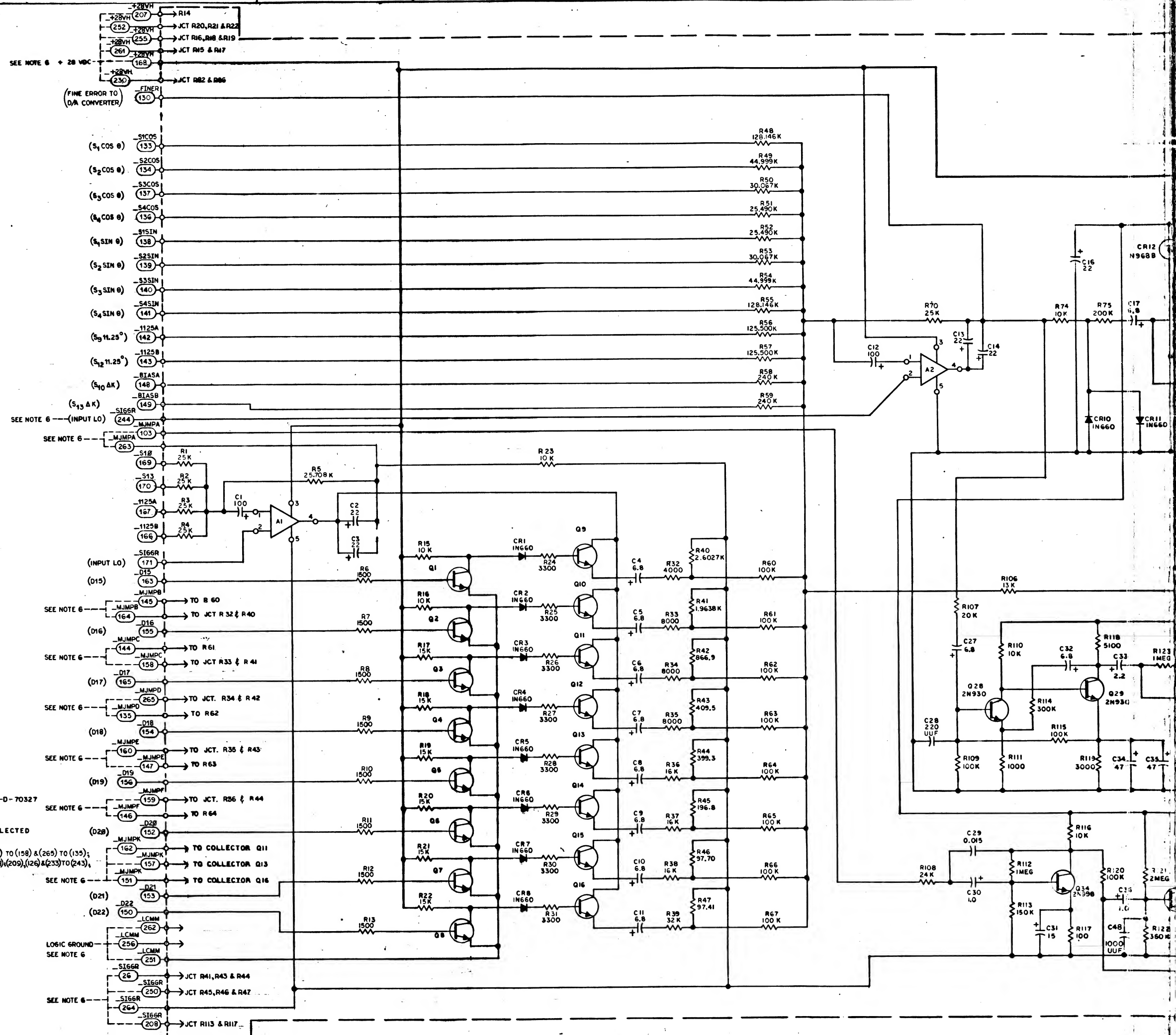
2010058 G



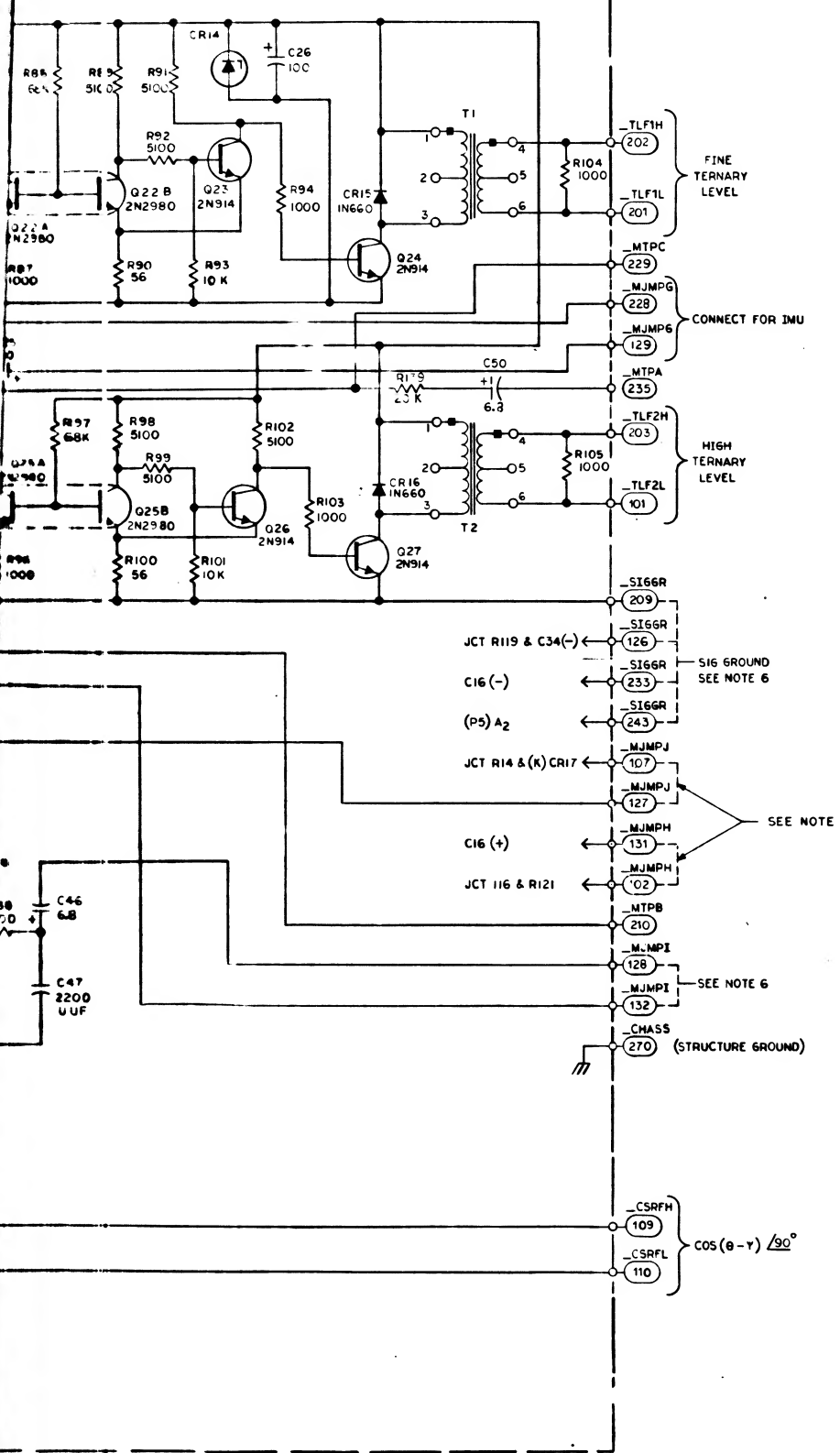
REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377-307	RESISTOR	25 K	± 0.1%	1/10 W
R2	-307				
R3	-307				
R4	-307				
R5	-333		25.708K	± 2%	1/4 W
R6	1006750-36		1500	± 2%	1/4 W
R7	-36				
R8	-36				
R9	-36				
R10	-36				
R11	-36				
R12	-36				
R13	-36				
R14	1010604-46		510	± 1%	1 W
R15	1006750-56		0 K	± 2%	1/4 W
R16	-56		10 K		
R17	-60		15 K		
R18	-60				
R19	-60				
R20	-60				
R21	-60				
R22	-60				
R23	-56		10 K		
R24	-44		3300		
R25	-44				
R26	-44				
R27	-44				
R28	-44				
R29	-44				
R30	-44				
R31	-44				
R32	1010377-304		4000	± 0.1%	1/10 W
R33	1010377-305		8000	± 0.1%	
R34	1010733-6		8000	± 1%	
R35	-7		16 K		
R36	-7		16 K		
R37	-7		32 K		
R38	-7		16 K		
R39	-9		2.6027K	± 0.1%	
R40	1010377-303		1.9638K	± 0.1%	
R41	1010377-302		866.9	± 1%	
R42	1010733-18		409.5		
R43	-4		399.3		
R44	-3		196.8		
R45	-2		97.70		
R46	-1		97.41		
R47	-1		128.146K	± 0.1%	
R48	1010377-313		44.999K	± 0.1%	
R49	-311		30.067K		
R50	-310		25.490K		
R51	-308		25.470K		
R52	-310		30.067K		
R53	-311		44.999K		
R54	-313		128.146K		
R55	-347		125.500K		
R56	-347		125.500K		
R57	-347		125.500K		
R58	1010369-90		240K	± 5%	1/8 W
R59	1010369-90		240K	± 5%	1/8 W
R60	1010377-312		100K	± 0.1%	1/10 W
R61	1010377-312				
R62	1010733-11				
R63	-11				
R64	-11				
R65	-11				
R66	-11				
R67	-11				
R70	1010377-307		25K	± 0.1%	1/10 W
R71					
R72					
R73					
R74	1006750-56		10K	± 2%	1/4 W
R75	1010733-119		200K	± 1%	1/10 W
R76	1006750-80		100K	± 2%	1/4 W
R77	-73		51K		
R78	-39		2000		
R79	-63		20K		
R80	1010733-12		25K	± 1%	1/10 W
R81	1010733-12		25K	± 1%	1/10 W
R82	1010604-45		300	± 1%	1 W
R83	1006750-73		51K	± 2%	1/4 W
R84	-73		51K		
R85	-44		3300		
R86	1010604-39		2000	± 1%	1 W
R87	1006750-32		1000	± 2%	1/4 W
R88	-76		68K		
R89	-49		5100		
R90	-2		56		
R91	-49		5100		
R92	-49		5100		
R93	-56		10 K		
R94	-32		1000		
R95	-60		15 K		
R96	-32		1000		
R97	-76		58K		
R98	-49		5100		
R99	-49		5100		
R100	-2		56		
R101	-56		10 K		
R102	-49		5100		
R103	-32		1000		
R104	-32		1000		
R105	-32		1000		
R106	-59		13 K		
R107	-63		20K		
R108	-65		24K		
R109	-80		100K		
R110	-56		10 K		
R111	-32		1000		
R112	1010369-105		1MEG	± 5%	1/8 W
R113	1006750-84		150 K	± 2%	1/4 W
R114	1010369-92		300K	± 5%	1/8 W
R115	1006750-80		100K	± 2%	1/4 W
R116	-56		10 K		
R117	-8		100		
R118	-49		5100		
R119	-43		3000		
R120	-80		100 K		
R121	1010369-112		2MEG	± 5%	1/8 W
R122	-94		360K		
R123	-105		MEG		
R124	1006750-80		100K	± 2%	1/4 W
R125	-84		150 K		
R126	-37		1600		

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R127	1006750-43				
R128	-43				
R129	-43				
R130	-43				
R131	-43				
R132	-43				
R133	-43				
R134	-43				
R135	-43				
R136	1006750-03				
R137	1006750-43				
R138	1006750-43				
R139	1006750-63				
C1	1006755-4				
C2	-85				
C3	-85				
C4	-79				
C5	-79				
C6	-79				
C7	-79				
C8	-79				
C9	-79				
C10	-79				
C11	-79				
C12	-14				
C13	-85				
C14	-85				
C15	-85				
C16	-85				
C17	-79				
C18	1006757-63				
C19	1006757-31				
C20	1006755-73				
C21	1010317-4				
C22	EE NOTE 5				
C23	1006755-81				
C24	-81				
C25	-69				
C26	-14				
C27	-79				
C28	1006777-16				
C29	1006777-39				
C30	1006755-69				
C31	-33				
C32	-79				
C33	-73				
C34	-36				
C35	-36				
C36	-69				
C37	-73				
C38	1006777-28				
C39	1006755-33				
C40	-79				
C41	-79				
C42	-10				
C43	-10				
C44	-73				
C45	-73				
C46	-79				
C47	1006777-26				
C48	1006777-24				
C49	1006755-85				
C50	1006755-79				
C51	1010385				
C52					
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C95					
C96					
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C98					
C99					
C100					

NOTES: 1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
4. SEE DRAWING NO. 2010019 FOR SCHEMATIC
5. THE VALUE OF C22 TO BE SELECTED AT FINAL TEST, PART TO BE SELECTED FROM CHART A
6. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (207), (252), (255), (261) & (168) TO (230); (103) TO (263); (145) TO (164); (144) TO (158) & (265) TO (135); (160) TO (147); (159) TO (146); (262) & (256) TO (251); (260), (250), (244) & (264) TO (208); (209), (126) & (233) TO (243); (131) TO (102); (128) TO (132); (151) & (157) TO (162); (107) TO (127)



- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
 3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
 4. SEE DRAWING NO. 2010019 FOR SCHEMATIC
 5. THE VALUE OF C22 TO BE SELECTED AT FINAL TEST, PART TO BE SELECTED FROM CHART A
 6. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (207), (252), (255), (261) & (168) TO (230); (103) TO (263); (145) TO (164); (144) TO (158) & (265) TO (135); (160) TO (147); (159) TO (146); (262) & (256) TO (251); (260), (250), (244) & (264) TO (208); (209), (126) & (233) TO (243); (131) TO (102); (128) TO (132); (151) & (157) TO (162); (107) TO (127)



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377-307	RESISTOR	25 K	± 0.1%	1/10 W
R2	-307				
R3	-307				
R4	-307				
R5	-333		25.708K		
R6	1006750-36		1500	± 2%	1/4 W
R7	-36				
R8	-36				
R9	-36				
R10	-36				
R11	-36				
R12	-36				
R13	-36				
R14	1010604-46		510	± 1%	1 W
R15	1006750-56		10 K	± 2%	1/4 W
R16	-56		10 K		
R17	-60		15 K		
R18	-60				
R19	-60				
R20	-60				
R21	-60				
R22	-60				
R23	-56		10 K		
R24	-44		3300		
R25	-44				
R26	-44				
R27	-44				
R28	-44				
R29	-44				
R30	-44				
R31	-44				
R32	1010377-304		4000	± 0.1%	1/10 W
R33	1010377-305		8000	± 0.1%	
R34	1010733-6		8000	± 1%	
R35	-6		8000		
R36	-7		16 K		
R37	-7		16 K		
R38	-7		16 K		
R39	-9		32 K		
R40	1010377-303		2.6027 K	± 0.1%	
R41	1010377-302		1.9638 K	± 0.1%	
R42	1010733-18		856.9	± 1%	
R43	-5		409.5		
R44	-4		399.3		
R45	-3		196.8		
R46	-2		97.70		
R47	-1		97.41		
R48	1010377-313		128.146 K	± 0.1%	
R49	-311		44.999 K		
R50	-310		30.067 K		
R51	-308		25.490 K		
R52	-308		25.490 K		
R53	-310		30.067 K		
R54	-311		44.999 K		
R55	-313		128.146 K		
R56	-347		125.500 K		
R57	-347		125.500 K		
R58	1010369-90		240 K	± 5%	1/8 W
R59	1010369-90		240 K	± 5%	1/8 W
R60	1010377-312		100 K	± 0.1%	1/10 W
R61	1010377-312		100 K	± 0.1%	
R62	1010733-11		25 K	± 1%	
R63	-11				
R64	-11				
R65	-11				
R66	-11				
R67	-11				
R70	1010377-307		25 K	± 0.1%	1/10 W
R71					
R72					
R73					
R74	1006750-56		10 K	± 2%	1/4 W
R75	1010733-119		200 K	± 1%	1/10 W
R76	1006750-80		100 K	± 2%	1/4 W
R77	-73		51 K		
R78	-39		2000		
R79	-63		20 K		
R80	1010733-12		25 K	± 1%	1/10 W
R81	1010733-12		25 K	± 1%	1/10 W
R82	1010604-45		360	± 1%	1 W
R83	1006750-73		51 K	± 2%	1/4 W
R84	-73		51 K		
R85	-44		3300		
R86	1010604-39		2000	± 1%	1 W
R87	1006750-32		1000	± 2%	1/4 W
R88	-76		68 K		
R89	-49		5100		
R90	-2		56		
R91	-49		5100		
R92	-49		5100		
R93	-56		10 K		
R94	-32		1000		
R95	-60		15 K		
R96	-32		1000		
R97	-76		68 K		
R98	-49		5100		
R99	-49		5100		
R100	-2		56		
R101	-56		10 K		
R102	-49		5100		
R103	-32		1000		
R104	-32		1000		
R105	-32		1000		
R106	-59		13 K		
R107	-63		20 K		
R108	-65		24 K		
R109	-80		100 K		
R110	-56		10 K		
R111	-32		1000		
R112	1010369-105		1 MEG	± 5%	1/8 W
R113	1006750-84		150 K	± 2%	1/4 W
R114	1010369-92		300 K	± 5%	1/8 W
R115	1006750-80		100 K	± 2%	1/4 W
R116	-56		10 K		
R117	-8		100		
R118	-49		5100		
R119	-43		3000		
R120	-80		100 K		
R121	1010369-112		2 MEG	± 5%	1/8 W
R122	-94		360 K		
R123	-105		1 MEG		
R124	1006750-80		100 K	± 2%	1/4 W
R125	-84		150 K		
R126	-37		1600		

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R127	1006750-43	RESISTOR	3000	± 2%	1/4 W
R128	-67		30 K		
R129	-60		15 K		
R130	-43		5100		
R131	-80		100 K		
R132	-49		5100		
R133	-56		10 K		
R134	-84		150 K		
R135	-80		100 K		
R136	1010369-105		1 MEG	± 5%	1/8 W
R137	1006750-43		3000	± 2%	1/4 W
R138	1006750-43		3000	± 2%	1/4 W
R139	1006750-63		20 K	± 2%	1/4 W
C1	1006755-14	CAPACITOR	100	± 10%	10 VDC
C2	-85		22		35 VDC
C3	-85		22		
C4	-79		6.8		
C5	-79				
C6	-79				
C7	-79				
C8	-79				
C9	-79				
C10	-79				
C11	-79				
C12	-14		100		10 VDC
C13	-85		22		35 VDC
C14	-85		22		
C16	-85		22		
C17	-79		6.8		
C18	1006777-63		0.33	± 5%	200 VDC
C19	1010369-31		470 UUF	± 10%	35 VDC
C20	1006755-73		2.2	± 10%	35 VDC
C21	1010317-4		.130	± 1%	30 VDC
C22	SEE NOTE 5			± 10%	100 VDC
C23	1006755-81		10		35 VDC
C24	-81		1.0		
C25	-69		1.0		
C26	-14		100		10 VDC
C27	-79		6.8		35 VDC
C28	1006777-16		220 UUF		100 VDC
C29	1006777-39		0.015		100 VDC
C30	1006755-69		1.0		35 VDC
C31	-33		15		20 VDC
C32	-79		6.8		35 VDC
C33	-73		2.2		35 VDC
C34	-36		47		20 VDC
C35	-36		47		20 VDC
C36	-69		1.0		35 VDC
C37	-73		2.2		35 VDC
C38	1006777-28		4700 UUF		100 VDC
C39	1006755-33		15		20 VDC
C40	-79		6.8		35 VDC
C41	-79		6.8		35 VDC
C42	-10		4.7		10 VDC
C43	-10		4.7		10 VDC
C44	-73		2.2		35 VDC
C45	-73		2.2		
C46	-79		6.8		
C47	1006777-26		2200 UUF		100 VDC
C48	1006777-24		1000 UUF		100 VDC
C49	1006755-85		22		35 VDC
C50	1006755-79		6.8		35 VDC
CR1	1010385	DIODE	IN660		
CR2					
CR3					
CR4					
CR5					
CR6					
CR7					
CR8	1010385				
CR10	1010385		IN660		
CR11	1010385		IN660		
CR12	1010380-12		IN965B		
CR13	1010380-7		IN965B		
CR14	1010372-13				
CR15	1010385		IN660		
CR16	1010385		IN660		
CR17	1010380-9		IN965B		
Q1	1010343-3	TRANSISTOR			
Q2					
Q3					
Q4					
Q5					
Q6					
Q7					
Q8					
Q9					
Q10					
Q11					
Q12					
Q13					
Q14					
Q15					
Q16	1010343-3				
Q18	1010397-1		2N930		
Q19	-1				
Q20	-1				
Q21	1010342		2N998		
Q22	1010652-1		2N2980		
Q23	1010966-1		2N914		
Q24	1010966-1		2N914		
Q25	1010652-1		2N2980		
Q26	1010966-1		2N914		
Q27	1010966-1		2N914		
Q28	1010397-1		2N930		
Q29	1010397-1		2N930		
Q30	1010342		2N998		
Q31	1010367-001		3N68		
Q32	1010367-001		3N68		
Q33	1010342		2N998		
Q34					
Q35					
A1	2007144	AMPLIFIER	SEE NOTE 4		
A2	2007144	AMPLIFIER	SEE NOTE 4		
T1	1010274	TRANSFORMER			
T2	1010274				
T3	1010274				

CHART A
C22

PART NO.	VALUE
1006777-24	1000 UUF
-25	1000 UUF
-26	2000 UUF
-27	3300 UUF
-28	4700 UUF
-29	5000 UUF
-30	6000 UUF
-31	010

REVISIONS 22770

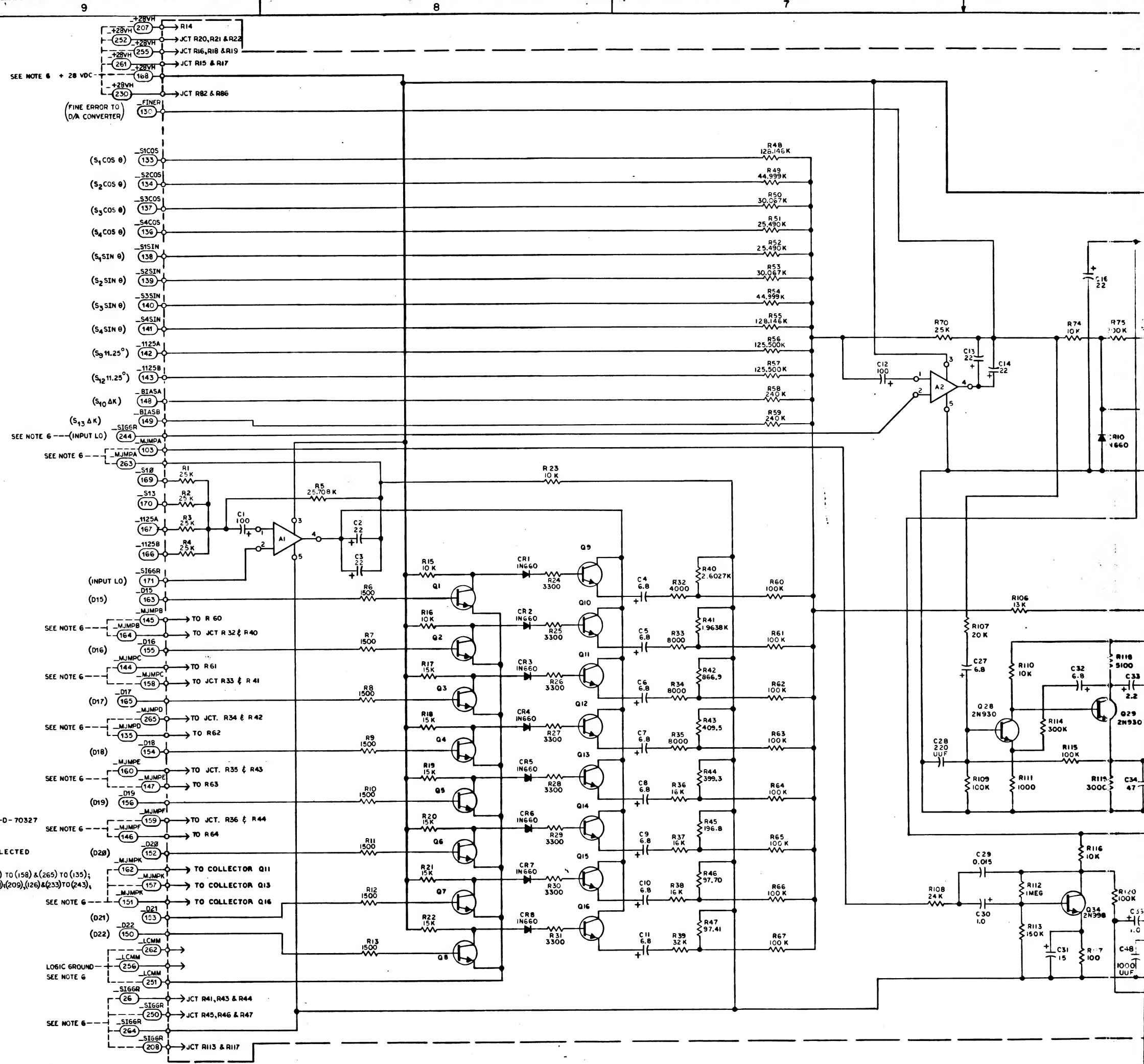
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B	REVISED PER TORR 15945	11/1/77	WJ
C	REVISED PER TORR 16620	2/23/78	WJ
D	REVISED PER TORR 17977	4/10/78	WJ
E	REVISED PER TORR 18294	4/10/78	WJ
F	REVISED PER TORR 20774	4/10/78	WJ
G	REVISED PER TORR 22515	4/10/78	WJ
H	REVISED PER TORR 25547	4/10/78	WJ

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL
HEAT TREATMENT
FINISH
NEXT ASSY USED ON
APPROVAL

INSTRUMENTATION LAB
CHECKED BY: [Signature]
APPROVAL: [Signature]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SCHEMATIC
MAIN SUMMING AMPL AND
QUADRATURE REJECTION
EACH IDENT NO: 80230 J
DATE: 2010058

372010058



- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
 3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
 4. SEE DRAWING NO. 2010019 FOR SCHEMATIC
 5. THE VALUE OF C22 TO BE SELECTED AT FINAL TEST, PART 10 TO BE SELECTED FROM CHART A
 6. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (207), (252), (255), (261) & (168) TO (230); (103) TO (263); (145) TO (164); (144) TO (158) & (265) TO (135); (160) TO (147); (159) TO (146); (262) & (256) TO (251); (260), (250), (244) & (264) TO (208); (209), (126) & (233) TO (243); (131) TO (102); (128) TO (132); (151) & (157) TO (162); (107) TO (127)

1/2010058

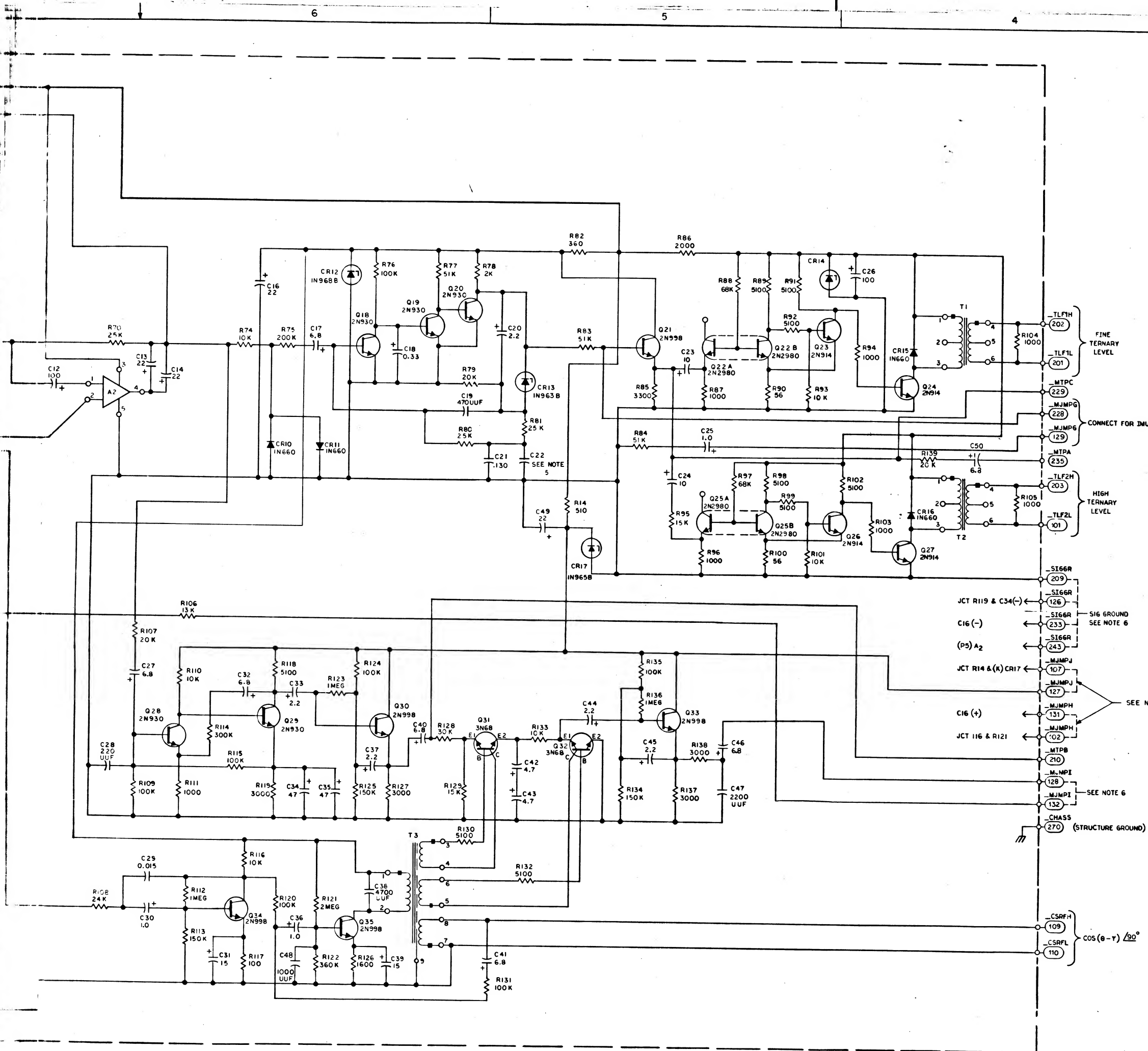


3/2010058

QTY REQD		PART OR IDENTIFYING NO		NOMENCLATURE OR DESCRIPTION		UNIT IN	
LIST OF MATERIALS							
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCE IS ON FRACTIONS DECIMALS ANGLES DO NOT SCALE THIS DRAWING MATERIAL HEAT TREATMENT FINISH NEXT ASSY USED ON IDENTIFICATION		B-1 F INSTRUMENTATION LAB COMMERCIAL GRADE DRAWN BY <u>W. J. [Signature]</u> DATE <u>11/1/68</u> CHECKED BY <u>W. J. [Signature]</u> DATE <u>11/1/68</u> APPROVAL OF <u>W. J. [Signature]</u> DATE <u>11/1/68</u> APPROVAL OF <u>W. J. [Signature]</u> DATE <u>11/1/68</u> NASA APPROVAL <u>W. J. [Signature]</u> DATE <u>11/1/68</u> 5TH APPROVAL <u>W. J. [Signature]</u> DATE <u>11/1/68</u>					
		MANNED SPACECRAFT CENTER HOUSTON TEXAS SCHEMATIC MAIN SUMMING AMPL AND QUADRATURE REACTION					
		DRAWING NO. <u>80230</u> J NADA DRAWING NO. <u>2010058</u>					
		PROJECT NO. <u>80230</u> J NADA PROJECT NO. <u>2010058</u>					
		PART NO. <u>80230</u> J NADA PART NO. <u>2010058</u>					

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(3H)



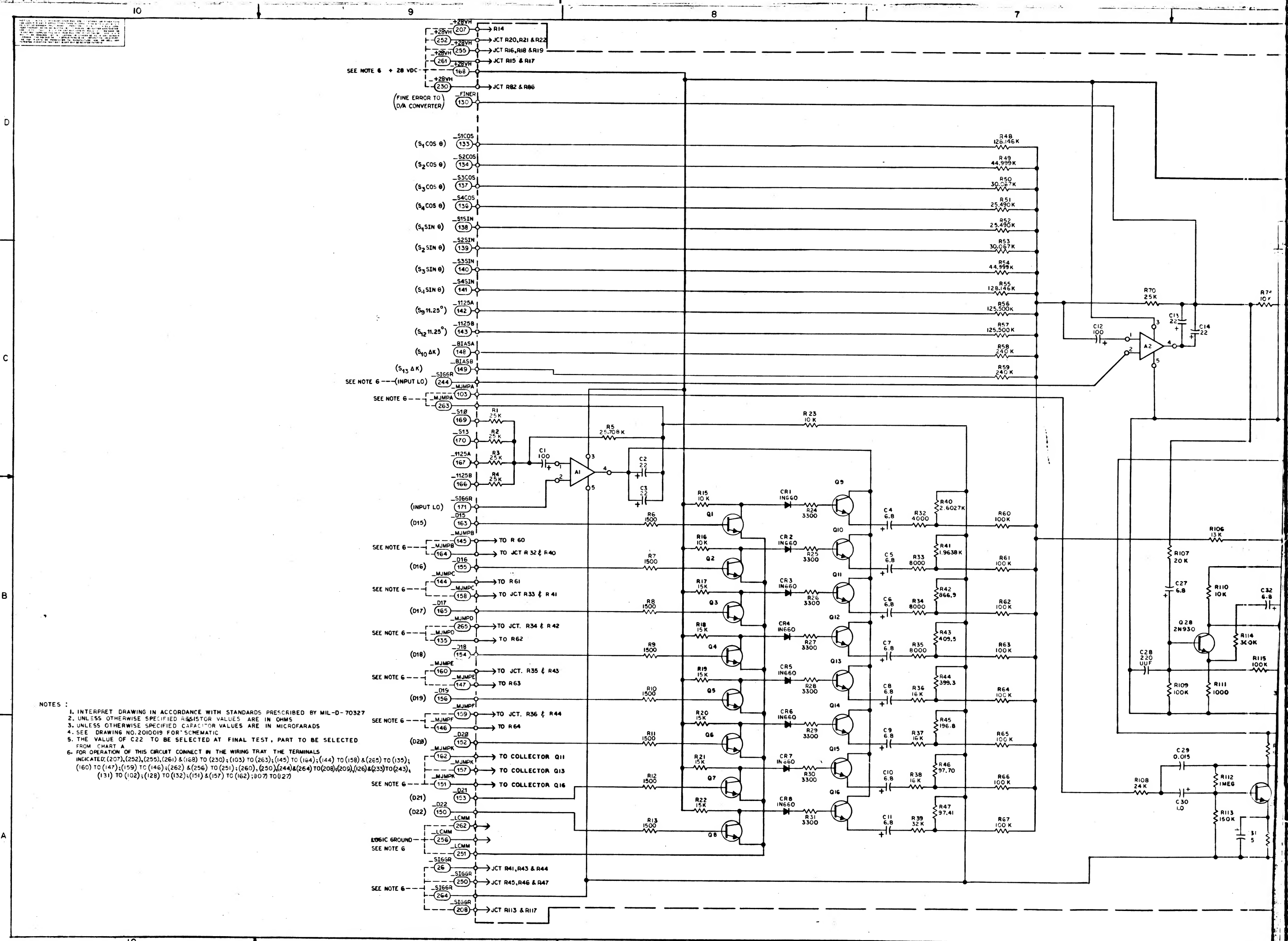
REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377 - 307	RESISTOR	25 K	± 0.1 %	1/10 W
R2	- 307				
R3	- 307				
R4	- 307				
R5	- 333		20.708 K	± 2 %	1/4 W
R6	1006750 - 36		1500	± 2 %	1/4 W
R7	- 36				
R8	- 36				
R9	- 36				
R10	- 36				
R11	- 36				
R12	- 36				
R13	- 36				
R14	1010604 - 46		510	± 1 %	1 W
R15	1006750 - 56		0 K	± 2 %	1/4 W
R16	- 56		10 K		
R17	- 60		15 K		
R18	- 60				
R19	- 60				
R20	- 60				
R21	- 60				
R22	- 60				
R23	- 56		10 K		
R24	- 44		3300		
R25	- 44				
R26	- 44				
R27	- 44				
R28	- 44				
R29	- 44				
R30	- 44				
R31	- 44				
R32	1010377 - 304		4000	± 0.1 %	1/10 W
R33	1010377 - 305		8000	± 0.1 %	
R34	1010373 - 6		8000	± 1 %	
R35	- 6		8000		
R36	- 7		16 K		
R37	- 7		16 K		
R38	- 7		16 K		
R39	- 9		32 K		
R40	1010377 - 303		2.6027 K	± 0.1 %	
R41	1010377 - 302		1.9618 K	± 0.1 %	
R42	1010733 - 18		966.9	± 1 %	
R43	- 5		409.5		
R44	- 4		399.3		
R45	- 3		196.8		
R46	- 2		97.70		
R47	- 1		97.41	± 0.1 %	
R48	1010377 - 313		128.146 K	± 0.1 %	
R49	- 311		44.999 K		
R50	- 310		33.067 K		
R51	- 308		25.490 K		
R52	- 308		25.490 K		
R53	- 310		30.067 K		
R54	- 311		44.999 K		
R55	- 313		128.146 K		
R56	- 347		125.500 K		
R57	- 347		125.500 K		
R58	1010369 - 90		240 K	± 5 %	1/8 W
R59	1010369 - 90		240 K	± 5 %	1/8 W
R60	1010377 - 312		100 K	± 0.1 %	1/10 W
R61	1010377 - 312		100 K	± 0.1 %	1/10 W
R62	1010733 - 11		51 K	± 0.1 %	
R63	- 11		51 K	± 0.1 %	
R64	- 11		51 K	± 0.1 %	
R65	- 11		51 K	± 0.1 %	
R66	- 11		51 K	± 0.1 %	
R67	- 11		51 K	± 0.1 %	
R70	1010377 - 307		25 K	± 0.1 %	1/10 W
R71					
R72					
R73					
R74	1006750 - 56		10 K	± 2 %	1/4 W
R75	1010733 - 119		200 K	± 1 %	1/10 W
R76	1006750 - 80		100 K	± 2 %	1/4 W
R77	- 73		107		
R78	- 39		2000		
R79	- 63		20 K		
R80	1010733 - 12		25 K	± 1 %	1/10 W
R81	1010733 - 12		25 K	± 1 %	1/10 W
R82	1010604 - 45		360	± 1 %	1 W
R83	1006750 - 73		51 K	± 2 %	1/4 W
R84	- 73		51 K	± 2 %	1/4 W
R85	- 44		3300		
R86	1010604 - 39		2000	± 1 %	1 W
R87	1006750 - 32		1000	± 2 %	1/4 W
R88	- 76		68 K		
R89	- 49		5100		
R90	- 2		56		
R91	- 49		5100		
R92	- 49		5100		
R93	- 56		10 K		
R94	- 32		1000		
R95	- 60		15 K		
R96	- 32		1000		
R97	- 76		68 K		
R98	- 49		5100		
R99	- 49		5100		
R100	- 2		56		
R101	- 56		10 K		
R102	- 49		5100		
R103	- 32		1000		
R104	- 32		1000		
R105	- 32		1000		
R106	- 59		13 K		
R107	- 63		20 K		
R108	- 65		24 K		
R109	- 80		100 K		
R110	- 56		10 K		
R111	- 32		1000		
R112	1010369 - 105		150 K	± 5 %	1/8 W
R113	1006750 - 84		300 K	± 2 %	1/4 W
R114	1010369 - 92		300 K	± 5 %	1/8 W
R115	1006750 - 80		100 K	± 2 %	1/4 W
R116	- 56		10 K		
R117	- 8		100		
R118	- 49		5100		
R119	- 43		3000		
R120	- 80		100 K		
R121	1010369 - 112		2 MEG	± 5 %	1/8 W
R122	- 94		350 K		
R123	- 105		MEG		
R124	1006750 - 80		100 K	± 2 %	1/4 W
R125	- 84		150 K		
R126	- 37		1600		

REF DES	PART NO.	DESCRIPTION
R127	1006750 - 33	RESISTOR
R128	- 33	
R129	- 33	
R130	- 33	
R131	- 30	
R132	- 49	
R133	- 58	
R134	- 34	
R135	- 80	
R136	1010369 - 105	
R137	1010369 - 43	
R138	1010369 - 43	
R139	1010369 - 63	
C1	1006755 - 4	CAP
C2	- 4	
C3	- 25	
C4	- 79	
C5	- 79	
C6	- 79	
C7	- 79	
C8	- 79	
C9	- 79	
C10	- 79	
C11	- 79	
C12	- 14	
C13	- 85	
C14	- 85	
C15	- 85	
C16	- 85	
C17	1006755 - 63	
C18	1006755 - 63	
C19	1006755 - 31	
C20	1006755 - 73	
C21	1010317 - 4	
C22	SEE NOTE 5	
C23	1006755 - 81	
C24	- 81	
C25	- 69	
C26	- 14	
C27	- 79	
C28	1006777 - 16	
C29	1006777 - 39	
C30	1006755 - 69	
C31	- 33	
C32	- 79	
C33	- 73	
C34	- 36	
C35	- 36	
C36	- 69	
C37	- 73	
C38	1006777 - 28	
C39	1006755 - 33	
C40	- 79	
C41	- 79	
C42	- 10	
C43	- 10	
C44	- 73	
C45	- 3	
C46	- 3	
C47	1006777 - 26	
C48	1006777 - 24	
C49	1006755 - 85	
C50	1006755 - 79	
CR1	1010385	DIODE
CR2		
CR3		
CR4		
CR5		
CR6		
CR7		
CR8	1010385	
CR9		
CR10	1010385	
CR11	1010385	
CR12	1010830 - 12	
CR13	1010830 - 7	
CR14	1010372 - 13	
CR15	1010385	
CR16	1010385	
CR17	1010830 - 9	
Q1	1010343 - 3	TRANSISTOR
Q2		
Q3		
Q4		
Q5		
Q6		
Q7		
Q8		
Q9		
Q10		
Q11		
Q12		
Q13		
Q14		
Q15		
Q16	1010343 - 3	
Q17		
Q18	1010397 - 1	
Q19	- 1	
Q20	- 1	
Q21	1010343 - 3	
Q22	1010343 - 1	
Q23	1010343 - 1	
Q24	1010343 - 1	
Q25	1010343 - 1	
Q26	1010343 - 1	
Q27	1010343 - 1	
Q28	1010343 - 1	
Q29	1010343 - 1	
Q30	1010343 - 1	
Q31	1010343 - 1	
Q32	1010343 - 1	
Q33	1010343 - 1	
Q34		
Q35		
A1	2007144	A.P.F.E.R
A2	2007144	A.P.F.E.R
T1	1010274	TRANSFORMER
T2	1010274	
T3	1010274	

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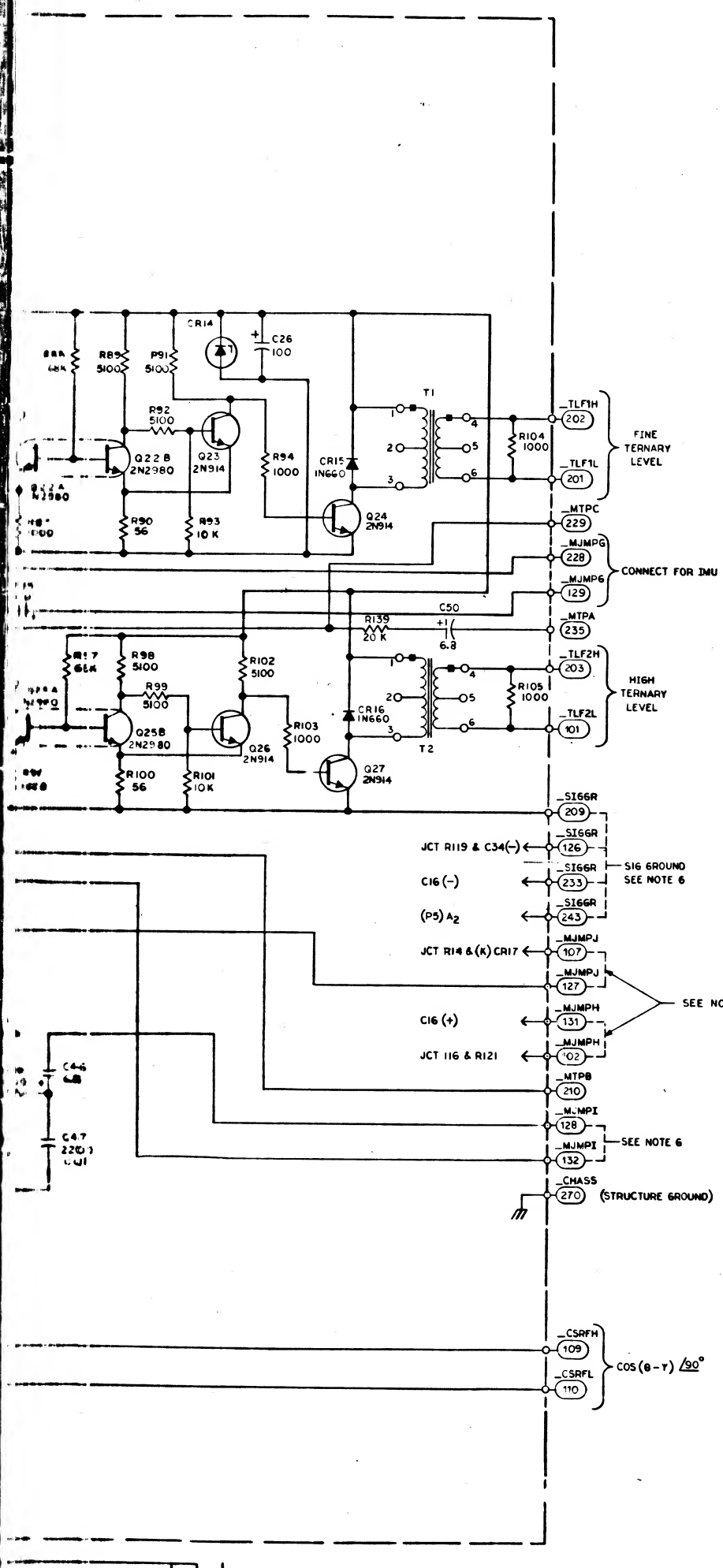
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NOTES :

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
4. SEE DRAWING NO. 2010019 FOR SCHEMATIC
5. THE VALUE OF C22 TO BE SELECTED AT FINAL TEST, PART TO BE SELECTED FROM CHART A
6. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (207), (252), (255), (261) & (168) TO (230); (103) TO (263); (145) TO (164); (144) TO (158) & (265) TO (135); (160) TO (147); (159) TO (146); (262) & (256) TO (251); (260), (250), (244) & (264) TO (208); (209), (126) & (233) TO (243); (131) TO (102); (128) TO (132); (151) & (157) TO (162); (107) TO (1027)

1/2010.058



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377-307	RESISTOR	25 K	± 0.1 %	1/10 W
R2	-307				
R3	-307				
R4	-307				
R5	-333		25.708K		
R6	1006750-36		1500	± 2 %	1/4 W
R7	-36				
R8	-36				
R9	-36				
R10	-36				
R11	-36				
R12	-36				
R13	-36				
R14	1010604-46		510	± 1 %	1 W
R15	1006750-56		10 K	± 2 %	1/4 W
R16	-56				
R17	-60		15 K		
R18	-60				
R19	-60				
R20	-60				
R21	-60				
R22	-60				
R23	-56		10 K		
R24	-44		3300		
R25	-44				
R26	-44				
R27	-44				
R28	-44				
R29	-44				
R30	-44				
R31	-44				
R32	1010377-304		4000	± 0.1 %	1/10 W
R33	1010377-305		8000	± 0.1 %	
R34	1010733-6		8000	± 1 %	
R35	-6		8000		
R36	-7		16 K		
R37	-7		16 K		
R38	-7		16 K		
R39	-9		32 K		
R40	1010377-303		2.6027 K	± 0.1 %	
R41	1010377-302		1.9638 K	± 0.1 %	
R42	1010733-18		866.9	± 1 %	
R43	-5		409.5		
R44	-4		399.3		
R45	-3		196.8		
R46	-2		97.70		
R47	-1		97.41		
R48	1010377-313		128.146 K	± 0.1 %	
R49	-311		44.999 K		
R50	-310		30.067 K		
R51	-308		25.490 K		
R52	-308		25.490 K		
R53	-310		30.067 K		
R54	-311		44.999 K		
R55	-313		128.146 K		
R56	-347		125.500 K		
R57	-347		125.500 K		
R58	1010369-90		240 K	± 5 %	1/8 W
R59	1010369-90		240 K	± 5 %	1/8 W
R60	1010377-312		100 K	± 0.1 %	1/10 W
R61	1010377-312			± 0.1 %	
R62	1010733-11			± 1 %	
R63	-11				
R64	-11				
R65	-11				
R66	-11				
R67	-11				
R70	1010377-307		25 K	± 0.1 %	1/10 W
R71					
R72					
R73					
R74	1006750-56		10 K	± 2 %	1/4 W
R75	1010733-119		200 K	± 1 %	1/10 W
R76	1006750-80		100 K	± 2 %	1/4 W
R77	-73		31 K		
R78	-39		2000		
R79	-63		25 K	± 1 %	1/10 W
R80	1010733-12		25 K	± 1 %	1/10 W
R81	1010733-12		25 K	± 1 %	1/10 W
R82	1010604-45		360	± 1 %	1 W
R83	1006750-73		51 K	± 2 %	1/4 W
R84	-73		51 K		
R85	-44		3300		
R86	1010604-39		2000	± 1 %	1 W
R87	1006750-32		1000	± 2 %	1/4 W
R88	-76		68 K		
R89	-49		5100		
R90	-2		56		
R91	-49		5100		
R92	-49		5100		
R93	-56		10 K		
R94	-32		1000		
R95	-60		15 K		
R96	-32		1000		
R97	-76		68 K		
R98	-49		5100		
R99	-49		5100		
R100	-2		56		
R101	-56		10 K		
R102	-49		5100		
R103	-32		1000		
R104	-32		1000		
R105	-32		1000		
R106	-59		13 K		
R107	-63		20 K		
R108	-65		24 K		
R109	-80		100 K		
R110	-56		10 K		
R111	-32		1000		
R112	1010369-105		1 MEG	± 5 %	1/8 W
R113	1006750-84		150 K	± 2 %	1/4 W
R114	1010369-92		300 K	± 5 %	1/8 W
R115	1006750-80		100 K	± 2 %	1/4 W
R116	-56		10 K		
R117	-8		100		
R118	-49		5100		
R119	-43		3000		
R120	-80		100 K		
R121	1010369-112		2 MEG	± 5 %	1/8 W
R122	-54		360 K		
R123	-105		1 MEG		
R124	1006750-80		100 K	± 2 %	1/4 W
R125	-84		150 K		
R126	-37		1600		

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R127	1006750-43	RESISTOR	3000	± 2 %	1/4 W
R128	-67		30 K		
R129	-60		15 K		
R130	-49		5100		
R131	-49		100 K		
R132	-49		5100		
R133	-56		10 K		
R134	-84		150 K		
R135	-80		100 K		
R136	1010369-105		1 MEG	± 5 %	1/8 W
R137	1006750-43		3000	± 2 %	1/4 W
R138	1006750-43		3000	± 2 %	1/4 W
R139	1006750-63		20 K	± 2 %	1/4 W
C1	1006755-14	CAPACITOR	100	± 10 %	10 VDC
C2	-85		22		35 VDC
C3	-85		22		35 VDC
C4	-79		6.8		
C5	-79				
C6	-79				
C7	-79				
C8	-79				
C9	-79				
C10	-79				
C11	-79				
C12	-14		100		10 VDC
C13	-85		22		35 VDC
C14	-85		22		35 VDC
C16	-85		22		
C17	-79		6.8		
C18	1006777-63		0.33		
C19	1010359-33		452 UUF	± 3 %	200 VDC
C20	1006755-73		2.2	± 10 %	35 VDC
C21	1010317-4		1.30	± 1 %	30 VDC
C22	SEE NOTE 5			± 10 %	100 VDC
C23	1006755-81		10		35 VDC
C24	-81		10		
C25	-69		1.0		10 VDC
C26	-14		100		10 VDC
C27	-79		6.8		35 VDC
C28	1006777-16		220 UUF		100 VDC
C29	1006777-39		0.015		20 VDC
C30	1006755-69		1.0		35 VDC
C31	-33		15		20 VDC
C32	-79		6.8		35 VDC
C33	-73		2.2		35 VDC
C34	-36		47		20 VDC
C35	-36		47		20 VDC
C36	-69		1.0		35 VDC
C37	-73		2.2		35 VDC
C38	1006777-28		4700 UUF		100 VDC
C39	1006755-33		15		20 VDC
C40	-79		6.8		35 VDC
C41	-79		6.8		35 VDC
C42	-10		4.7		10 VDC
C43	-10		4.7		10 VDC
C44	-73		2.2		35 VDC
C45	-73		2.2		35 VDC
C46	-79		6.8		
C47	1006777-26		2200 UUF		100 VDC
C48	1006777-24		1000 UUF		100 VDC
C49	1006755-85		2.2		35 VDC
C50	1006755-79		6.8		35 VDC
CR1	1010385	DIODE	IN660		
CR2					
CR3					
CR4					
CR5					
CR6					
CR7					
CR8	1010385				
CR10	1010385		IN660		
CR11	1010385		IN660		
CR12	1010830-12		IN968B		
CR13	1010830-7		IN968B		
CR14	1010372-13		IN968B		
CR15	1010385		IN660		
CR16	1010385		IN660		
CR17	1010830-9		IN968B		
Q1	1010343-3	TRANSISTOR			
Q2					
Q3					
Q4					
Q5					
Q6					
Q7					
Q8					
Q9					
Q10					
Q11					
Q12					
Q13					
Q14					
Q15					
Q16	1010343-3				
Q18	1010357-1		2N930		
Q19	-1				
Q20	-1				
Q21	1010342		2N998		
Q22	1010652-1		2N2980		
Q23	1010966-1		2N914		
Q24	1010966-1		2N914		
Q25	1010652-1		2N2980		
Q26	1010966-1		2N914		
Q27	1010966-1		2N914		
Q28	1010357-1		2N930		
Q29	1010357-1		2N930		
Q30	1010342		2N998		
Q31	1010367-001		3N68		
Q32	1010367-001		3N68		
Q33	1010342		2N998		
Q34					
Q35					
A1	2007144	AMPLIFIER	SEE NOTE 4		
A2	2007144	AMPLIFIER	SEE NOTE 4		
T1	1010274	TRANSFORMER			
T2	1010274				
T3	1010274				

CHART A
C22

PART NO.	VALUE
1006777-24	1000 UUF
-25	2000 UUF
-26	2000 UUF
-27	3500 UUF
-28	4700 UUF
-29	5000 UUF
-30	6800 UUF
-31	1010
1006777-40	5600 UUF
1006777-41	8200 UUF

2010058 K

REV	DESCRIPTION	DATE	APPROVAL
A	REVISED PER TDRR 14626	11/11/66	WKC
B	REVISED PER TDRR 15945	11/11/66	WKC
C	REVISED PER TDRR 16620	11/11/66	WKC
D	REVISED PER TDRR 17977	11/11/66	WKC
E	REVISED PER TDRR 18294	11/11/66	WKC
F	REVISED PER TDRR 20774	11/11/66	WKC
G	REVISED PER TDRR 22515	11/11/66	WKC
H	REVISED PER TDRR 25547	11/11/66	WKC
I	REVISED PER TDRR 27167	11/11/66	WKC
K	REVISED PER TDRR 27799	11/11/66	WKC

QTY REQD PART OR IDENTIFYING NO NOMENCLATURE OR DESCRIPTION PNC NO

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

FRACTIONS DECIMALS ANGLES

DO NOT SCALE THIS DRAWING

HEAT TREATMENT

NEXT ASSY USED ON FINAL PRSH APPLICATION

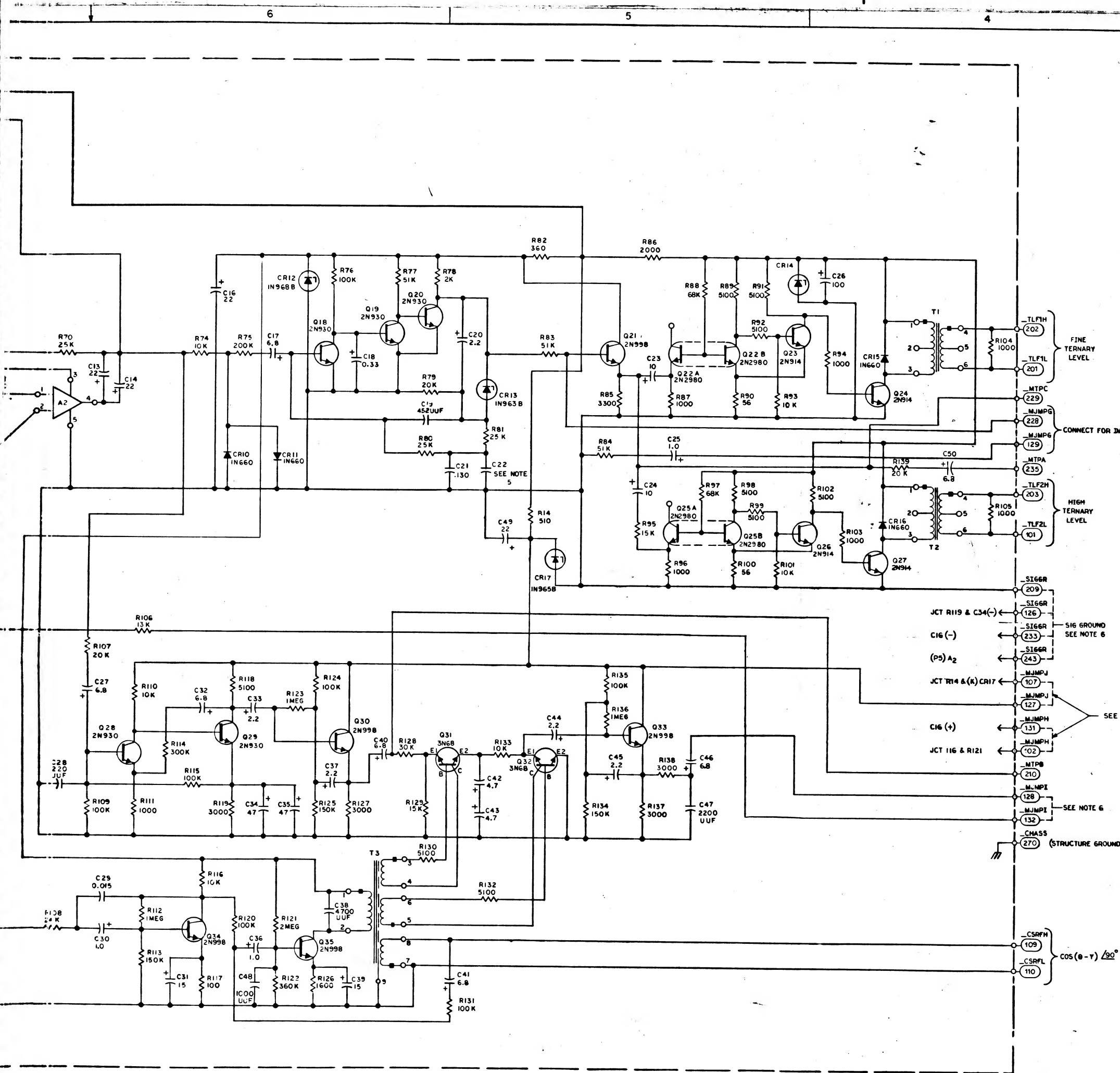
INSTRUMENTATION LAB
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

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APPROVAL BY: [Signature]

NASA APPROVAL [Signature]
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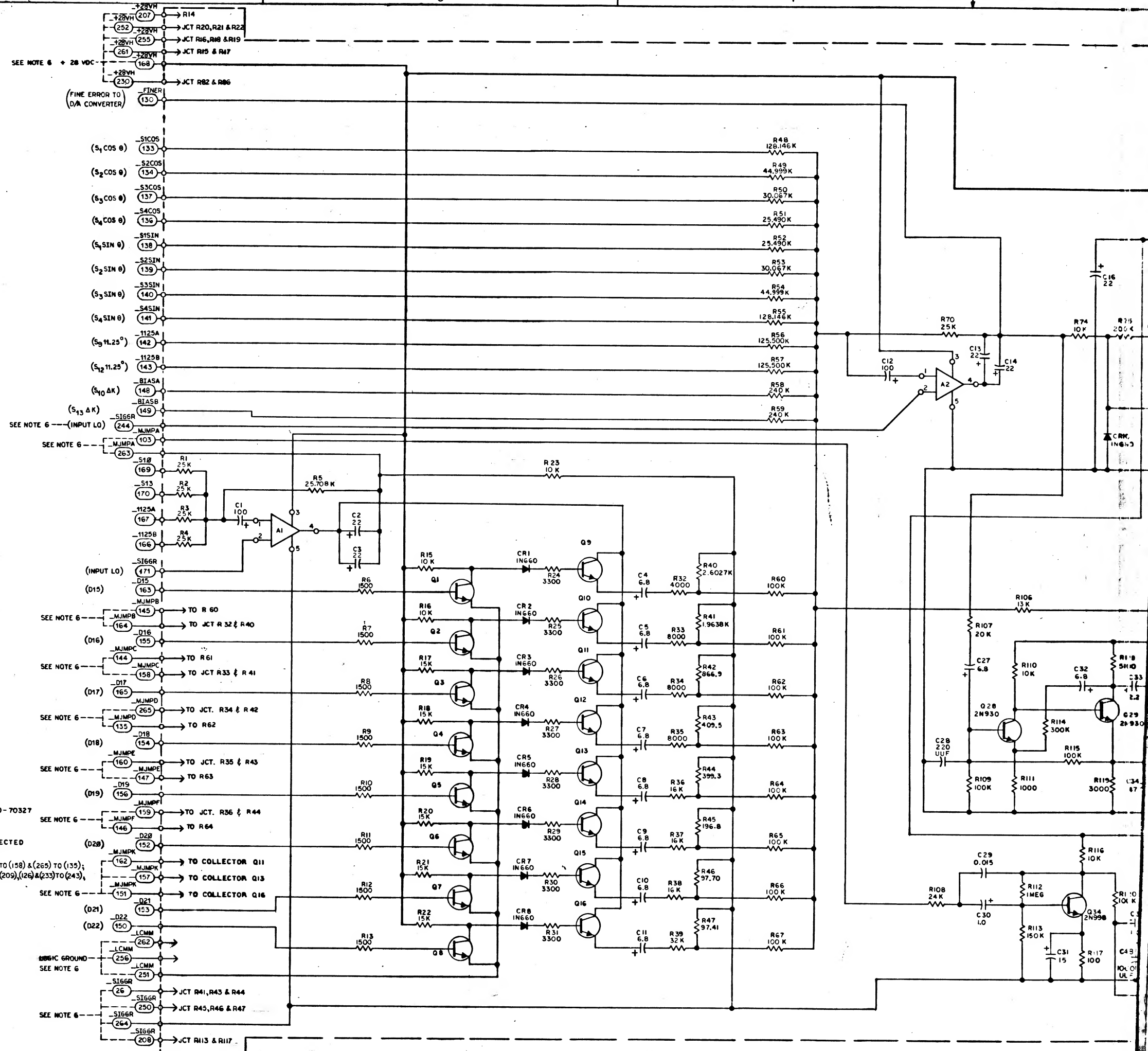
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REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377-307	RESISTOR	25 K	±0.1%	1/10 W
R2	-307				
R3	-307				
R4	-307				
R5	-333		25.708K		
R6	1006750-36		1500	±2%	1/4 W
R7	-36				
R8	-36				
R9	-36				
R10	-36				
R11	-36				
R12	-36				
R13	-36				
R14	1010604-46		510	±1%	1 W
R15	1006750-56		10 K	±2%	1/4 W
R16	-56				
R17	-60		15 K		
R18	-60				
R19	-60				
R20	-60				
R21	-60				
R22	-60				
R23	-56		10 K		
R24	-44		3300		
R25	-44				
R26	-44				
R27	-44				
R28	-44				
R29	-44				
R30	-44				
R31	-44				
R32	1010377-304		4000	±0.1%	1/10 W
R33	1010377-305		8000	±0.1%	
R34	1010733-6		8000	±1%	
R35	-6		8000		
R36	-7		16 K		
R37	-7		16 K		
R38	-7		16 K		
R39	-9		32 K		
R40	1010377-303		2.6027K	±0.1%	
R41	1010377-302		1.9638K	±0.1%	
R42	1010733-18		866.9	±1%	
R43	-5		409.5		
R44	-4		399.3		
R45	-3		196.8		
R46	-2		97.70		
R47	-1		97.41		
R48	1010377-313		128.146K	±0.1%	
R49	-311		44.999 K		
R50	-310		30.067 K		
R51	-308		25.490 K		
R52	-308		25.490 K		
R53	-310		30.067K		
R54	-311		44.999 K		
R55	-313		128.146 K		
R56	-347		125.500K		
R57	-347		125.500K		
R58	1010369-90		240 K	±5%	1/8 W
R59	1010369-90		240 K	±5%	1/8 W
R60	1010377-312		100 K	±0.1%	1/10 W
R61	1010377-312				
R62	1010733-11			±1%	
R63	-11				
R64	-11				
R65	-11				
R66	-11				
R67	-11				
R70	1010377-307		25 K	±0.1%	1/10 W
R71					
R72					
R73					
R74	1006750-56		10 K	±2%	1/4 W
R75	1010733-119		200K	±1%	1/10 W
R76	1006750-80		100K	±2%	1/4 W
R77	-73		51K		
R78	-39		2000		
R79	-63		20K		
R80	1010733-12		25K	±1%	1/10 W
R81	1010733-12		25K	±1%	1/10 W
R82	1010604-45		360	±1%	1 W
R83	1006750-73		51 K	±2%	1/4 W
R84	-73		51 K		
R85	-44		3300		
R86	1010604-39		2000	±1%	1 W
R87	1006750-32		1000	±2%	1/4 W
R88	-76		68K		
R89	-49		5100		
R90	-49		5100		
R91	-49		5100		
R92	-49		5100		
R93	-56		10 K		
R94	-32		1000		
R95	-60		15 K		
R96	-32		1000		
R97	-76		68K		
R98	-49		5100		
R99	-49		5100		
R100	-2		56		
R101	-56		10 K		
R102	-49		5100		
R103	-32		1000		
R104	-32		1000		
R105	-32		1000		
R106	-59		13 K		
R107	-63		20K		
R108	-65		24K		
R109	-80		100K		
R110	-56		10 K		
R111	-32		1000		
R112	1010369-105		1MEG	±5%	1/8 W
R113	1006750-84		150 K	±2%	1/4 W
R114	1010369-92		300K	±5%	1/8 W
R115	1006750-80		100 K	±2%	1/4 W
R116	-56		10 K		
R117	-8		100		
R118	-49		5100		
R119	-43		3000		
R120	-80		100K		
R121	1010369-112		2MEG	±5%	1/8 W
R122	-94		360 K		
R123	-105		1MEG		
R124	1006750-80		100K	±2%	1/4 W
R125	-84		150 K		
R126	-37		1600		

REF DES	PART NO.	DESCRIPTION	VALUE
R127	1006750-43	RESISTOR	
R128	-47		
R129	-60		
R130	-49		
R131	-80		
R132	-49		
R133	-56		
R134	-84		
R135	-80		
R136	1010369-105		
R137	1006750-43		
R138	1006750-43		
R139	1006750-63		
C1	006755-14	CAPACITOR	
C2	-85		
C3	-65		
C4	-79		
C5	-79		
C6	-79		
C7	-79		
C8	-79		
C9	-79		
C10	-79		
C11	-79		
C12	-14		
C13	-85		
C14	-85		
C16	-86		
C17	-79		
C18	1006777-63		
C19	1010369-33		
C20	1006755-73		
C21	1010317-4		
C22	SEE NOTE 5		
C23	1006755-81		
C24	-81		
C25	-69		
C26	-14		
C27	-79		
C28	1006777-16		
C29	1006777-39		
C30	1006755-69		
C31	-33		
C32	-79		
C33	-73		
C34	-36		
C35	-36		
C36	-69		
C37	-73		
C38	1006777-28		
C39	1006755-33		
C40	-79		
C41	-79		
C42	-10		
C43	-10		
C44	-73		
C45	-73		
C46	-79		
C47	1006777-26		
C48	1006777-24		
C49	1006755-85		
C50	1006755-79		
CR1	1010385	DIODE	
CR2			
CR3			
CR4			
CR5			
CR6			
CR7			
CR8	1010385		
CR10	1010385		
CR11	1010385		
CR12	1010830-12		
CR13	1010830-7		
CR14	1010372-13		
CR15	1010385		
CR16	1010385		
CR17	1010830-9		
Q1	1010343-3	TRANSISTOR	
Q2			
Q3			
Q4			
Q5			
Q6			
Q7			
Q8			
Q9			
Q10			
Q11			
Q12			
Q13			
Q14			
Q15			
Q16	1010343-3		
Q18	1010397-1		
Q19	-1		
Q20	-1		
Q21	1010342		
Q22	1010652-1		
Q23	1010966-1		
Q24	1010966-1		
Q25	1010652-1		
Q26	1010966-1		
Q27	1010966-1		
Q28	1010397-1		
Q29	1010397-1		
Q30	1010342		
Q31	1010367-001		
Q32	1010367-001		
Q33	1010342		
Q34			
Q35			
A1	2007144	AMPLIFIER	
A2	2007144	AMPLIFIER	
T1	1010274	TRANSFORMER	
T2	1010274		
T3	1010274		

2010058



- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
 3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
 4. SEE DRAWING NO. 2010019 FOR SCHEMATIC
 5. THE VALUE OF C22 TO BE SELECTED AT FINAL TEST, PART TO BE SELECTED FROM CHART A
 6. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (207), (252), (255), (261) & (168) TO (250); (103) TO (263); (145) TO (164); (144) TO (158) & (265) TO (135); (160) TO (147); (159) TO (146) & (262) & (256) TO (251); (260), (250), (244) & (264) TO (208), (209), (126) & (233) TO (243); (131) TO (102); (128) TO (132); (151) & (157) TO (162); 007 TO 027

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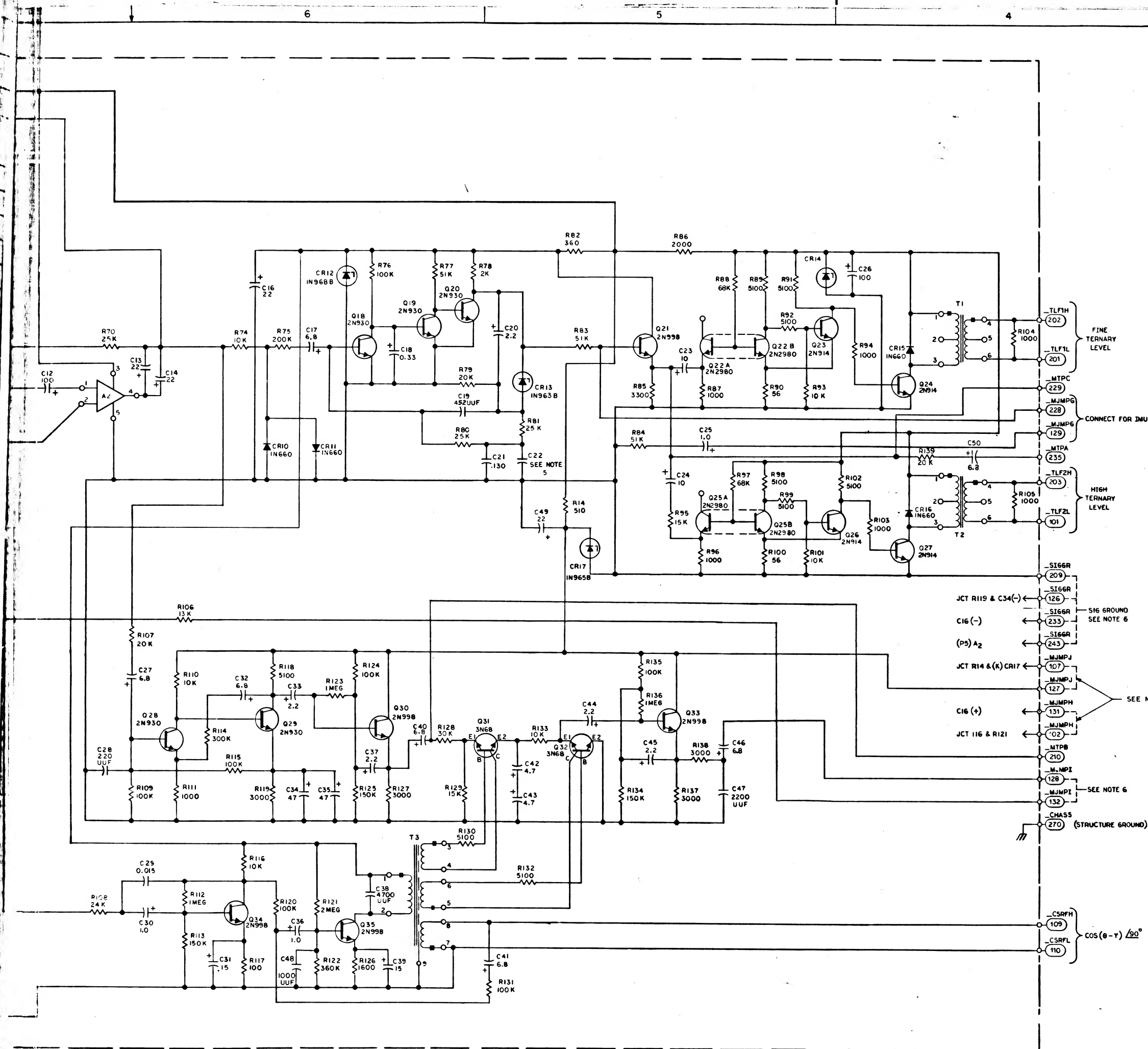
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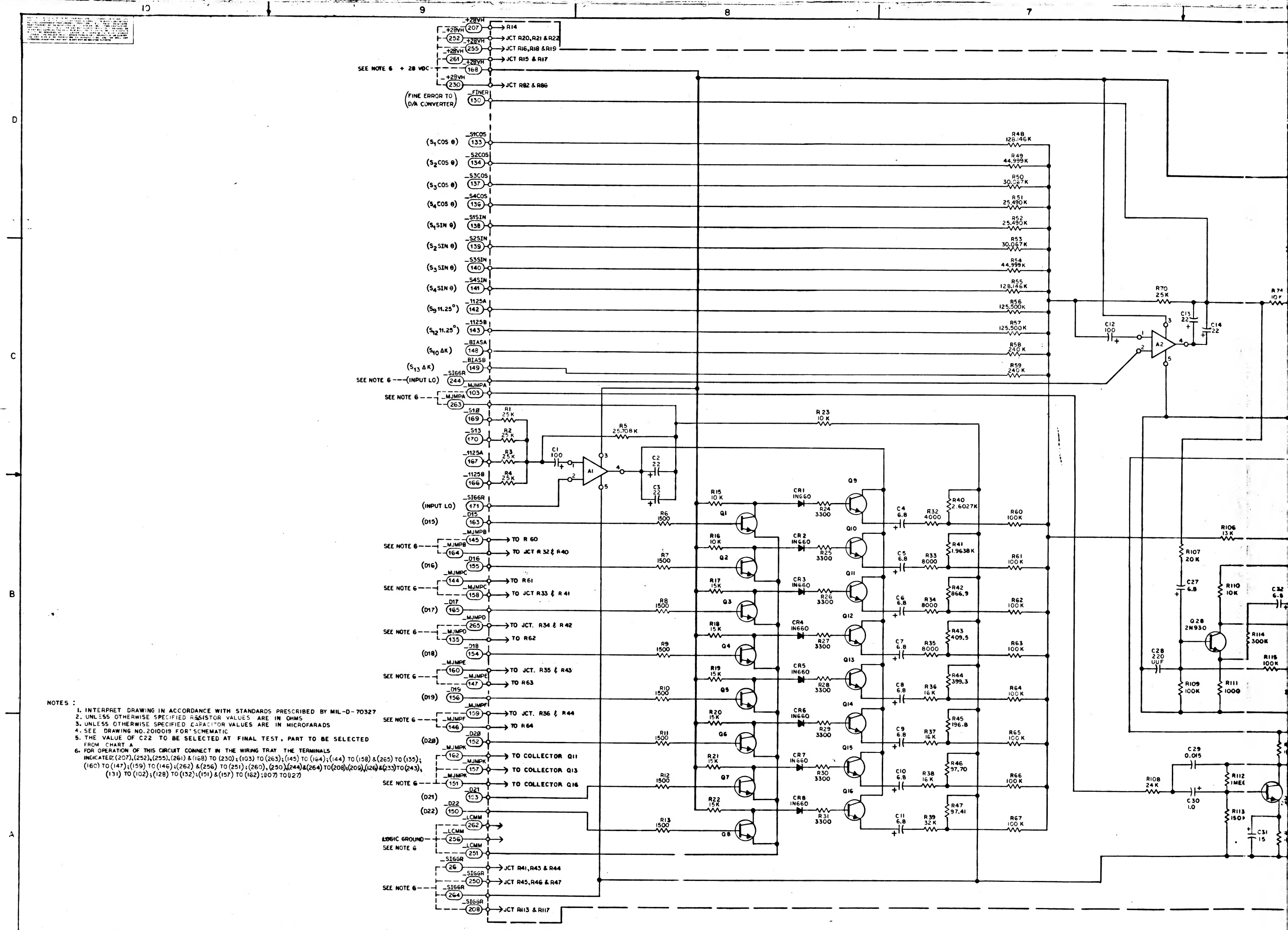


2010058

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377-30	RESISTOR	25 K	2.01%	1/4 W
R2	-30				
R3	-30				
R4	-307				
R5	-333		27.708K		
R6	1006750-36		1500	2.2%	1/4 W
R7	-36				
R8	-36				
R9	-36				
R10	-36				
R11	-36				
R12	-36				
R13	-36				
R14	1010604-46		510	2.1%	1 W
R15	1006750-56		10 K	2.2%	1/4 W
R16	-56				
R17	-60		15 K		
R18	-60				
R19	-60				
R20	-60				
R21	-60				
R22	-60				
R23	-56		10 K		
R24	-44		3300		
R25	-44				
R26	-44				
R27	-44				
R28	-44				
R29	-44				
R30	-44				
R31	-44				
R32	1010377-304		4000	2.01%	1/10 W
R33	1010377-305		8000	2.01%	
R34	1010733-6		8000	2.1%	
R35	-6		8000		
R36	-7		16 K		
R37	-7		16 K		
R38	-7		16 K		
R39	-9		32 K		
R40	1010377-303		2.6027K	2.01%	
R41	1010377-302		1.9638K	2.01%	
R42	1010733-18		866.9	2.1%	
R43	-5		409.5		
R44	359.3		359.3		
R45	-3		196.8		
R46	-2		97.70		
R47	-1		97.41		
R48	1010377-313		128.146K	2.01%	
R49	-311		44.999 K		
R50	-310		30.067 K		
R51	-308		25.490 K		
R52	-308		25.490 K		
R53	-310		30.067K		
R54	-311		44.999 K		
R55	-313		128.146K		
R56	-347		125.500K		
R57	-347		125.500K		
R58	1010369-30		240 K	2.5%	1/8 W
R59	1010369-30		240 K	2.5%	1/8 W
R60	1010377-112		100 K	2.01%	1/10 W
R61	1010377-312				
R62	1010733-11				
R63	-11				
R64	-11				
R65	-11				
R66	-11				
R67	-11				
R70	1010377-307		25 K	2.01%	1/10 W
R71					
R72					
R73					
R74	1006750-56		10 K	2.2%	1/4 W
R75	1010733-119		200K	2.1%	1/10 W
R76	1006750-80		100K	2.2%	1/4 W
R77	-73		51 K		
R78	-39		2000		
R79	-63		20 K		
R80	1010733-12		25 K	2.1%	1/10 W
R81	1010733-12		25 K	2.1%	1/10 W
R82	1010604-45		3.0		
R83	1006750-73		51 K	2.2%	1/4 W
R84	-73		51 K		
R85	-44		3300		
R86	1010604-39		2000	2.1%	1 W
R87	1006750-32		1000	2.2%	1/4 W
R88	-76		68 K		
R89	-49		56		
R90	-2		56		
R91	-49		5100		
R92	-49		5100		
R93	-56		10 K		
R94	-32		1000		
R95	-60		15 K		
R96	-32		1000		
R97	-76		68 K		
R98	-49		5100		
R99	-49		5100		
R100	-2		56		
R101	-56		10 K		
R102	-49		5100		
R103	-32		1000		
R104	-32		1000		
R105	-32		1000		
R106	-59		13 K		
R107	-63		20 K		
R108	-65		24 K		
R109	-80		100 K		
R110	-56		10 K		
R111	-32		1000		
R112	1010369-105		1MEG	2.5%	1/8 W
R113	1006750-84		150 K	2.2%	1/4 W
R114	1010369-32		300K	2.5%	1/8 W
R115	1006750-80		100 K	2.2%	1/4 W
R116	-56		10 K		
R117	-8		100		
R118	-49		5100		
R119	-43		3000		
R120	-60		100 K		
R121	1010369-112		2MEG	2.5%	1/8 W
R122	-94		360 K		
R123	-105		1MEG		
R124	1006750-80		100 K	2.2%	1/4 W
R125	-84		150 K		
R126	-37		1600		

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R127	1006750-45	RESISTOR			
R128	-45				
R129	-45				
R130	-49				
R131	-80				
R132	-49				
R133	-56				
R134	-84				
R135	-80				
R136	1010369-105				
R137	1006750-43				
R138	1006750-43				
R139	1006750-63				
C1	1006750-4	CONDENSATOR			
C2	-85				
C3	-85				
C4	-73				
C5	-79				
C6	-79				
C7	-73				
C8	-73				
C9	-79				
C10	-79				
C11	-79				
C12	-14				
C13	-14				
C14	-85				
C16	-85				
C17	-73				
C18	1006777-63				
C19	1010369-35				
C20	1006755-73				
C21	1010317-4				
C22	SEE NOTE 5				
C23	1006755-81				
C24	-81				
C25	-69				
C26	-14				
C27	-79				
C28	1006777-16				
C29	1010777-19				
C30	1006755-69				
C31	-33				
C32	-79				
C33	-73				
C34	-36				
C35	-36				
C36	-69				
C37	-73				
C38	1006777-28				
C39	1006755-33				
C40	-79				
C41	-79				
C42	-10				
C43	-10				
C44	-73				
C45	-73				
C46	-79				
C47	1006777-26				
C48	1006777-24				
C49	1006755-85				
C50	1006755-79				
CR1	1010385	DIODE			
CR2					
CR3					
CR4					
CR5					
CR6					
CR7					
CR8	1010385				
CR9					
CR10	1010385				
CR11	1010385				
CR12	1008815-12				
CR13	1008815-7				
CR14	1010372-13				
CR15	1010385				
CR16	1010385				
CR17	1008815-9				
Q1	1010343-3	TRANSISTOR			
Q2					
Q3					
Q4					
Q5					
Q6					
Q7					
Q8					
Q9					
Q10					
Q11					
Q12					
Q13					
Q14					
Q15					
Q16	1010343-3				
Q18	1010397-1				
Q19	-1				
Q20	-1				
Q21	1010343				
Q22	1010552-1				
Q23	1010966-1				
Q24	1010966-1				
Q25	1010652-1				
Q26	1010966-1				
Q27	1010966-1				
Q28	1010397-1				
Q29	1010397-1				
Q30	0.0342				
Q31	1010367-001				
Q32	1010367-001				
Q33	1010342				
Q34					
Q35					
A1	2007.44	AMPLIFIER			
A2	2007.44	AMPLIFIER			
T1	1010274	TRANSFORMER			
T2	1010274	TRANSFORMER			
T3	1010274	TRANSFORMER			

2.42.0-10.05.8



NOTES :
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
4. SEE DRAWING NO. 2010019 FOR SCHEMATIC
5. THE VALUE OF C22 TO BE SELECTED AT FINAL TEST, PART TO BE SELECTED FROM CHART A
6. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (207), (252), (255), (261) & (168) TO (230); (103) TO (263); (145) TO (164); (144) TO (158) & (265) TO (135); (160) TO (147); (159) TO (146); (262) & (256) TO (251); (260), (250), (244) & (264) TO (208); (209), (126) & (233) TO (243); (131) TO (102); (128) TO (132); (151) & (157) TO (162); 007 TO 0027

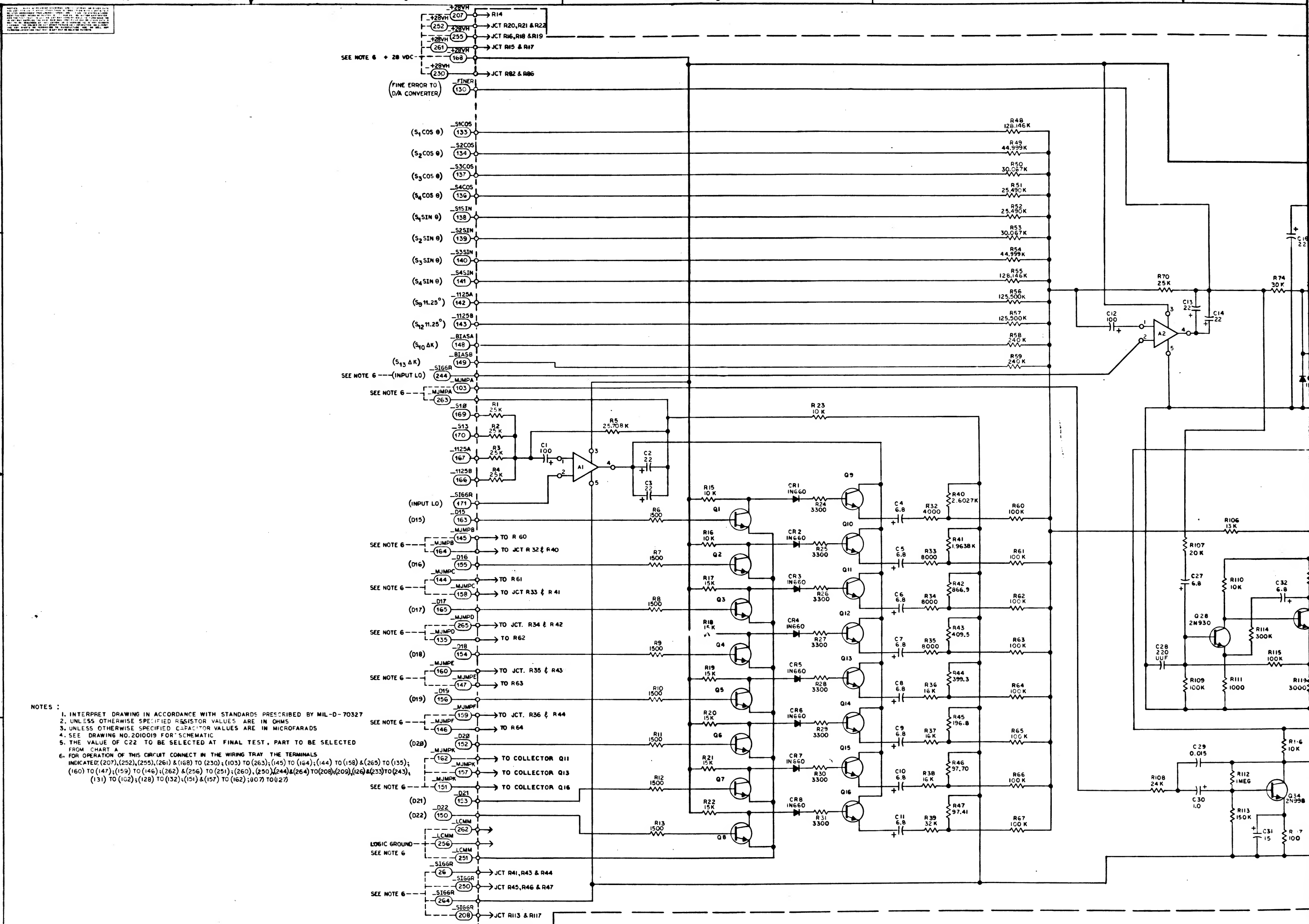
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D

C

B

A

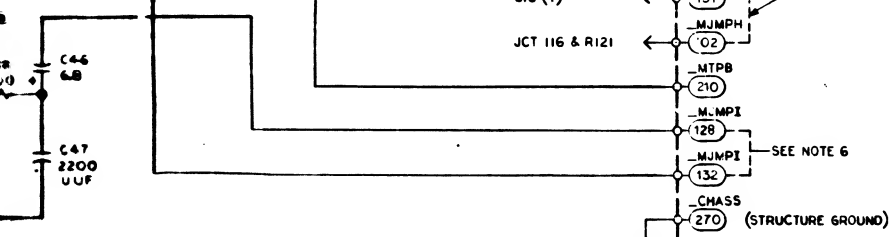


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6. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (207), (252), (255), (261) & (168) TO (230); (103) TO (263); (145) TO (164); (144) TO (158) & (265) TO (155); (160) TO (147); (159) TO (146); (262) & (256) TO (251); (260), (250), (244) & (264) TO (208); (209), (126) & (233) TO (243); (131) TO (102); (128) TO (132); (151) & (157) TO (162); 007 TO 027



6

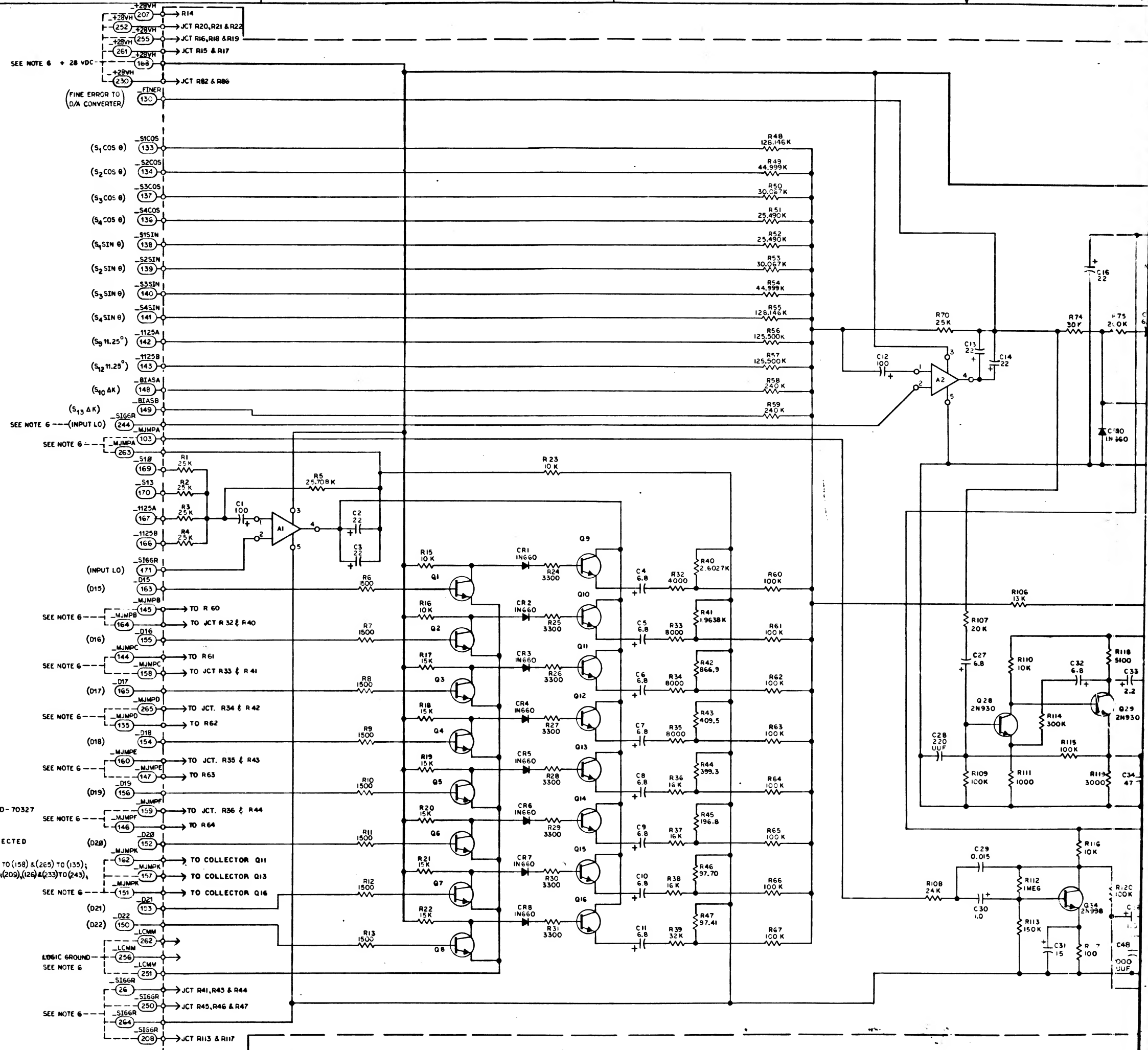


3/201005

2

CHART A	
C22	
PART NO.	VALUE
1006777-24	1000 UUF
-25	2000 UUF
-26	2200 UUF
-27	3300 UUF
-28	4700 UUF
-29	5000 UUF
-30	6800 UUF
-31	010
1006777-40	5600UUF
1006777-41	8200UUF

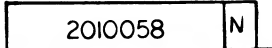
QTY REQD		PRT OR IDENTIFYING NO		NOMENCLATURE OR DESCRIPTION		FIN FIN	
				LIST OF MATERIALS			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON				ISIT INSTRUMENTATION LAB Cambridge, Mass. DATE: 11/21/68 BY: [Signature] CHECKED: [Signature] APPROVAL: [Signature] DATE: 11/21/68 BY: [Signature]		MANNED DESIGNS CENTER HOUSTON, TEXAS SCHEMATIC MAIN SUMMING AMPL AND QUADRATURE REJECTION	
DO NOT SCALE THIS DRAWING MATERIAL				NASA APPROVAL: [Signature] DATE: 11/21/68 BY: [Signature]		COLOR IDENT NO: 527 80230 J NADA DRAWING NO: 2010058	
MEAT TREATMENT:				NEXT ASSY		USED ON	
FINAL FINISH:				APP. OF: [Signature]		DATE: 11/21/68	



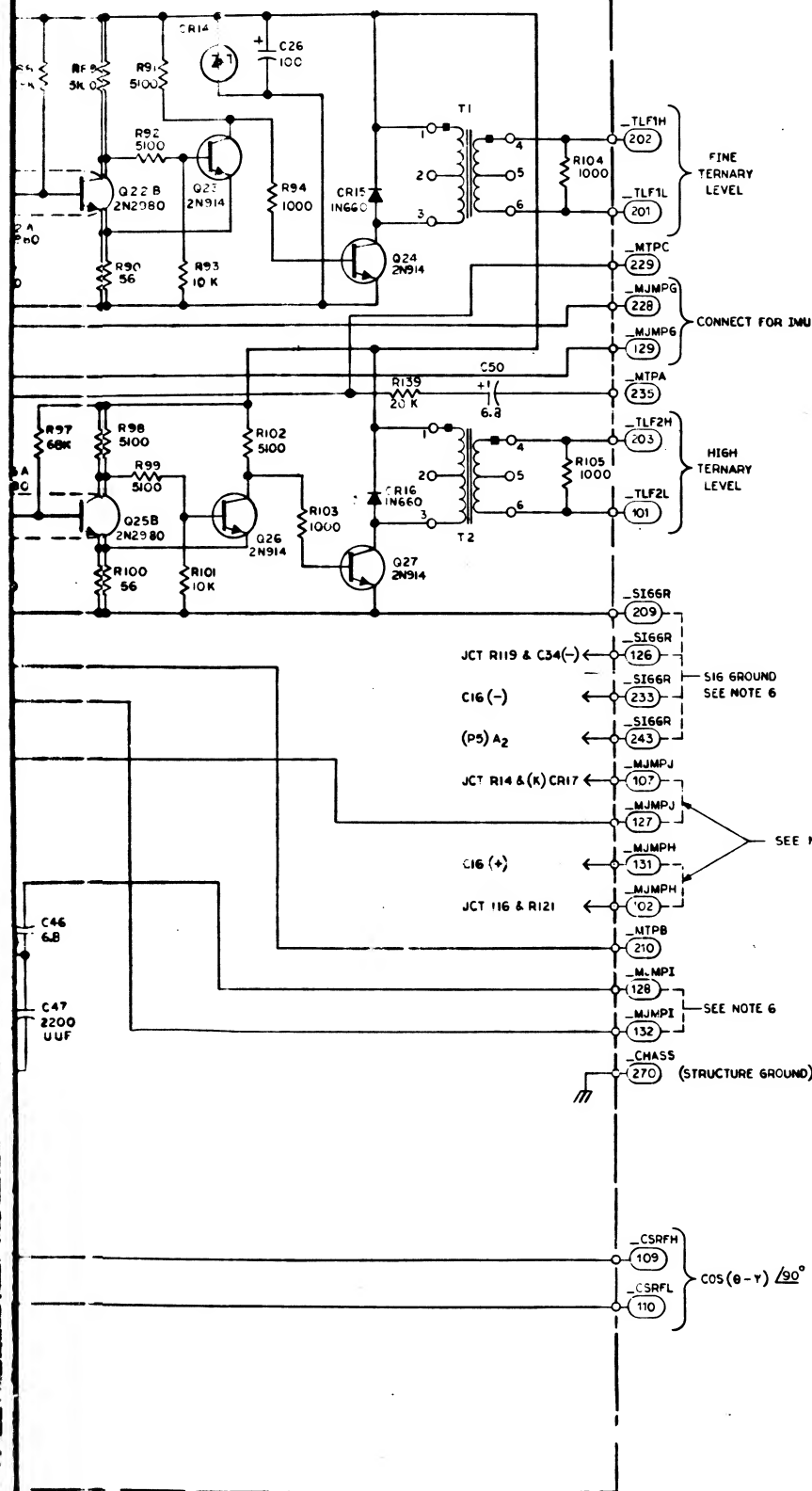
NOTES:

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3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
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6. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (207), (252), (255), (261) & (168) TO (230); (103) TO (263); (145) TO (144); (144) TO (158) & (265) TO (155); (160) TO (147); (159) TO (146); (262) & (256) TO (251); (260), (250), (244) & (264) TO (208); (209), (126) & (233) TO (243); (131) TO (102); (128) TO (132); (151) & (157) TO (162); (107) TO (127)

1/2010058



REF DES	PART NO	DESCRIPTION	VALUE
R127	1006750 -43	RESISTOR	10 K
R128	-43		K
R129	-43		0
R130	-43		0
R131	-43		0
R132	-43		0
R133	-56		1 K
R134	-84		1 K
R135	-85		1 K
R136	100369 -63		10 K
R137	1006750 -43		10 K
R138	1006750 -43		10 K
R139	1006750 -63		1 K
C1	006755 -4	CAPACITOR	100
C2	-85		100
C3	-85		100
C4	-79		100
C5	-79		100
C6	-79		100
C7	-79		100
C8	-79		100
C9	-79		100
C10	-79		100
C11	-79		100
C12	-14		100
C13	-85		100
C14	-85		100
C16	-85		100
C17	-79		100
C18	1005777 -63		0.1
C19	1006900 -013		100 UUF
C20	1006755 -73		2
C21	1003317 -4		10
C23	SEE NOTE 5		10
C24	1006755 -81		10
C25	-69		10
C26	-14		10
C27	-79		10
C28	1005777 -19		225 UUF
C29	1005777 -19		0.015
C30	1006755 -69		1.0
C31	-33		1
C32	-79		1.8
C33	-73		1.2
C34	-36		47
C35	-36		1
C36	-69		10
C37	-73		1.2
C38	1006777 -28		47 UUF
C39	1006755 -33		15
C40	-79		1.8
C41	-79		1.8
C42	-10		1.7
C43	-10		4.7
C44	-73		2.2
C45	-73		2.2
C46	-79		1.8
C47	1006777 -26		22 UUF
C48	1006777 -24		10 UUF
C49	1006755 -85		12
C50	1006782 -19		10
C51	1010409 -18	CAPACITOR	1 UUF
CR1	1010385	DIODE	1N660
CR2			
CR3			
CR4			
CR5			
CR6			
CR7	1010385		
CR8	1010385		1N660
CR10	1010385		1N660
CR11	1010385		1N660
CR12	1008815 -12		1N668B
CR13	1008815 -7		1N658B
CR14	1010372 -13		
CR15	1010365		1N660
CR16	1010385		1N660
CR17	1008815 -9		1N658B
Q1	1010343 -3	TRANSISTOR	
Q2			
Q3			
Q4			
Q5			
Q6			
Q7			
Q8			
Q9			
Q10			
Q11			
Q12			
Q13			
Q14			
Q15			
Q16	1010343 -3		
Q18	1010397 -1		2N930
Q19	-1		
Q20	-1		
Q21	1010342		2N938
Q22	100652 -1		2N28C
Q23	1010966 -1		2N14
Q24	1010966 -1		2N14
Q25	1010852 -1		2N28C
Q26	10966 -1		2N14
Q27	10966 -1		2N14
Q28	1010397 -1		2N930
Q29	1010397 -1		2N930
Q30	00342		2N938
Q31	1010367 -001		1N68
Q32	1010367 -001		1N68
Q33	1010342		2N938
Q34			
Q35			
A1	2007144	AMPLIFIER	SECTION
A2	2007144	AMPLIFIER	SECTION
T1	1010274	TRANSFORMER	
T2	1010274		



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377-307	RESISTOR	25 K	± 0.1 %	1/10 W
R2	-307				
R3	-307				
R4	-307				
R5	-333		25.708K	± 2 %	1/4 W
R6	1006750-36		1500	± 2 %	1/4 W
R7	-36				
R8	-36				
R9	-36				
R10	-36				
R11	-36				
R12	-36				
R13	-36				
R14	1010604-46		510	± 1 %	1 W
R15	1006750-56		10 K	± 2 %	1/4 W
R16	-56				
R17	-60				
R18	-60				
R19	-60				
R20	-60				
R21	-60				
R22	-60				
R23	-56		10 K		
R24	-44		3300		
R25	-44				
R26	-44				
R27	-44				
R28	-44				
R29	-44				
R30	-44				
R31	-44				
R32	1010377-304		4000	± 0.1 %	1/10 W
R33	1010377-305		8000	± 0.1 %	
R34	1010733-6		8000	± 1 %	
R35	-6		16 K		
R36	-7		16 K		
R37	-7		16 K		
R38	-7		16 K		
R39	-9		32 K		
R40	1010377-303		2.6027K	± 0.1 %	
R41	1010377-302		1.9638K	± 0.1 %	
R42	1010733-18		866.9	± 1 %	
R43	-5		409.5		
R44	-4		399.3		
R45	-3		196.8		
R46	-2		97.70		
R47	-1		97.41		
R48	1010377-313		128.146K	± 0.1 %	
R49	-311		44.999 K		
R50	-310		30.067 K		
R51	-308		25.490 K		
R52	-308		25.490 K		
R53	-310		30.067 K		
R54	-311		44.999 K		
R55	-313		128.146K		
R56	-347		125.500K		
R57	-347		125.500K		
R58	1010369-90		240 K	± 5 %	1/8 W
R59	1010369-90		240 K	± 5 %	1/8 W
R60	1010377-312		100 K	± 0.1 %	1/10 W
R61	1010377-312		100 K	± 0.1 %	1/10 W
R62	1010733-11			± 1 %	
R63	-11				
R64	-11				
R65	-11				
R66	-11				
R67	-11				
R70	1010377-307		25 K	± 0.1 %	1/10 W
R71					
R72					
R73					
R74	1006750-47		30 K	± 2 %	1/4 W
R75	1010733-119		200 K	± 1 %	1/10 W
R76	1006750-80		100 K	± 2 %	1/4 W
R77	-73		51 K		
R78	-39		2000		
R79	-63		20 K		
R80	1010733-12		25 K	± 1 %	1/10 W
R81	1010733-12		25 K	± 1 %	1/10 W
R82	1010604-45		360	± 1 %	1 W
R83	1006750-73		51 K	± 2 %	1/4 W
R84	-73		51 K		
R85	-44		3300		
R86	1010604-39		2000	± 1 %	1 W
R87	1006750-32		1000	± 2 %	1/4 W
R88	-76		68 K		
R89	-49		510		
R90	-2		56		
R91	-49		510		
R92	-49		510		
R93	-56		10 K		
R94	-32		1000		
R95	-60		15 K		
R96	-32		1000		
R97	-76		68 K		
R98	-49		510		
R99	-49		510		
R100	-2		56		
R101	-56		10 K		
R102	-49		510		
R103	-32		1000		
R104	-32		1000		
R105	-32		1000		
R106	-59		13 K		
R107	-63		20 K		
R108	-65		24 K		
R109	-80		100 K		
R110	-56		10 K		
R111	-32		1000		
R112	1010369-105		1MEG	± 5 %	1/8 W
R113	1006750-84		300 K	± 2 %	1/4 W
R114	1010369-92		300 K	± 5 %	1/8 W
R115	1006750-80		100 K	± 2 %	1/4 W
R116	-56		10 K		
R117	-8		100		
R118	-49		510		
R119	-43		3000		
R120	-80		100 K		
R121	1010369-112		2MEG	± 5 %	1/8 W
R122	-94		360 K		
R123	-105		1MEG		
R124	1006750-80		100 K	± 2 %	1/4 W
R125	-84		150 K		
R126	-37		1600		

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R127	1006750-43	RESISTOR	3000	± 2 %	1/4 W
R128	-67		30 K		
R129	-60		15 K		
R130	-49		5100		
R131	-80		100 K		
R132	-49		5100		
R133	-56		10 K		
R134	-84		150 K		
R135	-80		100 K		
R136	1010369-105		1MEG	± 5 %	1/8 W
R137	1006750-43		3000	± 2 %	1/4 W
R138	1006750-43		3000	± 2 %	1/4 W
R139	1006750-63		20 K	± 2 %	1/4 W
C1	1006755-14	CAPACITOR	100	± 10 %	10 VDC
C2	-85		22		35 VDC
C3	-85		22		
C4	-79		6.8		
C5	-79				
C6	-79				
C7	-79				
C8	-79				
C9	-79				
C10	-79				
C11	-79				
C12	-14		100		10 VDC
C13	-85		22		35 VDC
C14	-85		22		
C16	-85		22		
C17	-79		5.8		
C18	1006777-63		0.33		
C19	1006900-013		460 UUF	± 1 %	50 VDC
C20	1006755-73		2.2	± 10 %	35 VDC
C21	1010317-4		.130	± 1 %	30 VDC
C22	SEE NOTE 5			± 10 %	100 VDC
C23	1006755-81		10		35 VDC
C24	-81		10		
C25	-79		1.0		
C26	-14		100		10 VDC
C27	-79		6.8		35 VDC
C28	1006777-16		220 UUF		100 VDC
C29	1006777-39		0.015		100 VDC
C30	1006755-69		1.0		35 VDC
C31	-33		15		20 VDC
C32	-79		6.8		35 VDC
C33	-73		2.2		35 VDC
C34	-36		47		20 VDC
C35	-36		47		20 VDC
C36	-69		1.0		35 VDC
C37	-73		2.2		35 VDC
C38	1006777-28		4700 UUF		100 VDC
C39	1006755-33		15		20 VDC
C40	-79		6.8		35 VDC
C41	-79		6.8		35 VDC
C42	-10		4.7		10 VDC
C43	-10		4.7		10 VDC
C44	-73		2.2		35 VDC
C45	-73		2.2		35 VDC
C46	-79		6.8		
C47	1006777-26		2200 UUF		100 VDC
C48	1006777-24		1000 UUF		100 VDC
C49	1006755-85		2.2		35 VDC
C50	1006755-79		6.8		35 VDC
C51	1010409-18	CAPACITOR	51 UUF	± 2 %	500 VDC
CR1	1010385	DIODE	1N660		
CR2					
CR3					
CR4					
CR5					
CR6					
CR7	1010385				
CR8	1010385		1N660		
CR10	1010385		1N660		
CR11	1010385		1N660		
CR12	1008815-12		1N968B		
CR13	1008815-12		1N968B		
CR14	1010372-13		1N660		
CR15	1010385		1N660		
CR16	1010385		1N660		
CR17	1008815-9		1N968B		
Q1	1010343-3	TRANSISTOR			
Q2					
Q3					
Q4					
Q5					
Q6					
Q7					
Q8					
Q9					
Q10					
Q11					
Q12					
Q13					
Q14					
Q15					
Q16	1010343-3				
Q18	1010397-1		2N930		
Q19	-1				
Q20	-1				
Q21	1010342		2N998		
Q22	1010652-1		2N2980		
Q23	1010966-1		2N914		
Q24	1010966-1		2N914		
Q25	1010652-1		2N2980		
Q26	1010966-1		2N914		
Q27	1010966-1		2N914		
Q28	1010397-1		2N930		
Q29	1010397-1		2N930		
Q30	1010342		2N998		
Q31	1010367-001		3N68		
Q32	1010367-001		3N68		
Q33	1010342		2N998		
Q34					
Q35					
A1	2007144	AMPLIFIER	SEE NOTE 4		
A2	2007144	AMPLIFIER	SEE NOTE 4		
T1	1010274	TRANSFORMER			
T2	1010274				
T3	1010274				

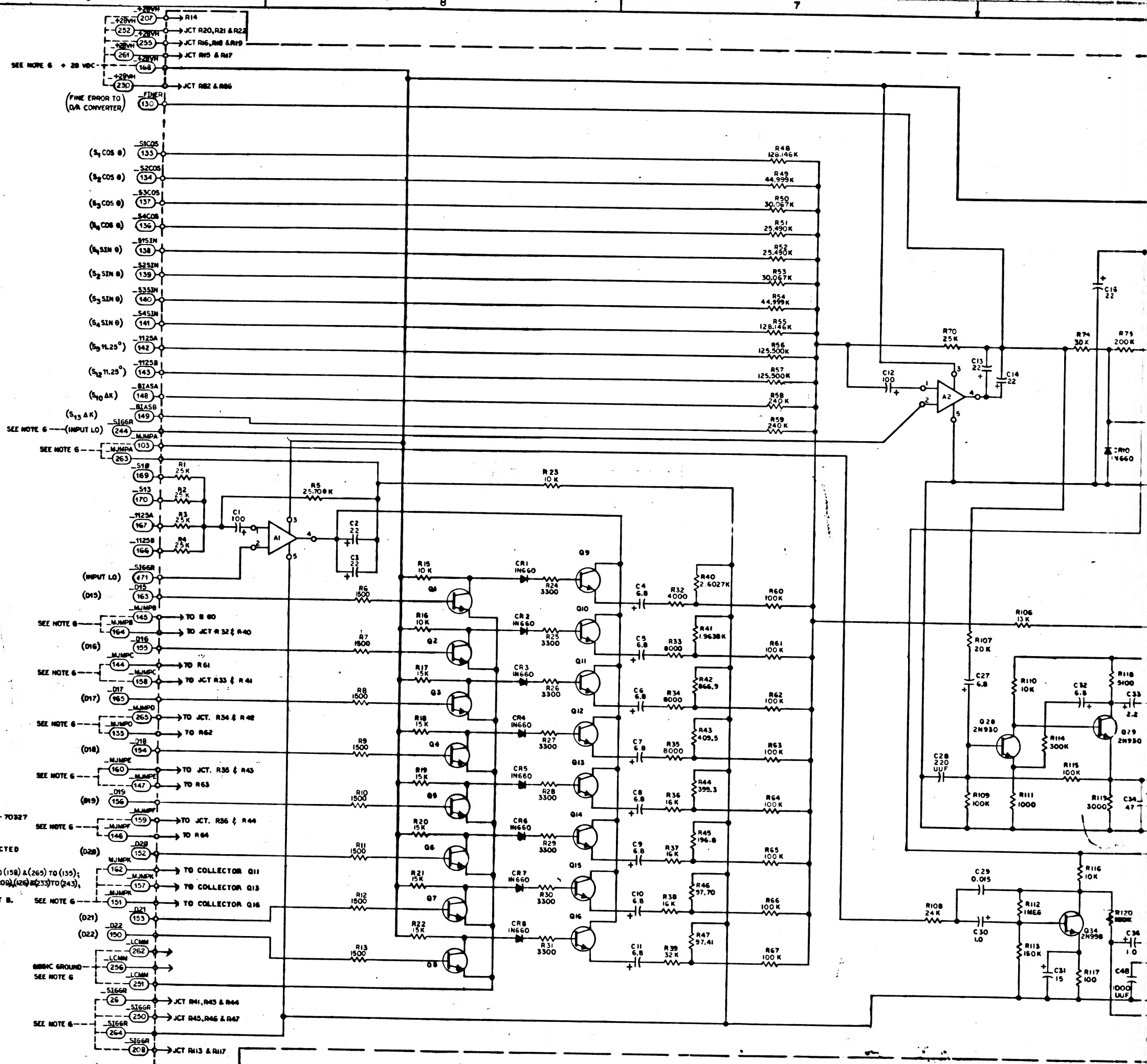
CHART A	
PART NO.	VALUE
1006777-24	1000 UUF
-25	2000 UUF
-26	2000 UUF
-27	3300 UUF
-28	4700 UUF
-29	5000 UUF
-30	6800 UUF
-31	0.010
1006777-40	5000 UUF
1006777-41	8200 UUF

N 8900102

REVISIONS	
REV	DESCRIPTION
A	REVISED PER TDRR 1626
B	REVISED PER TDRR 15945
C	REVISED PER TDRR 16620
D	REVISED PER TDRR 17977
E	REVISED PER TDRR 18294
F	REVISED PER TDRR 20774
G	REVISED PER TDRR 22515
H	REVISED PER TDRR 25547
I	REVISED PER TDRR 27167
J	REVISED PER TDRR 27799
K	REVISED PER TDRR 28185
L	REVISED PER TDRR 30240
M	REVISED PER TDRR 31066

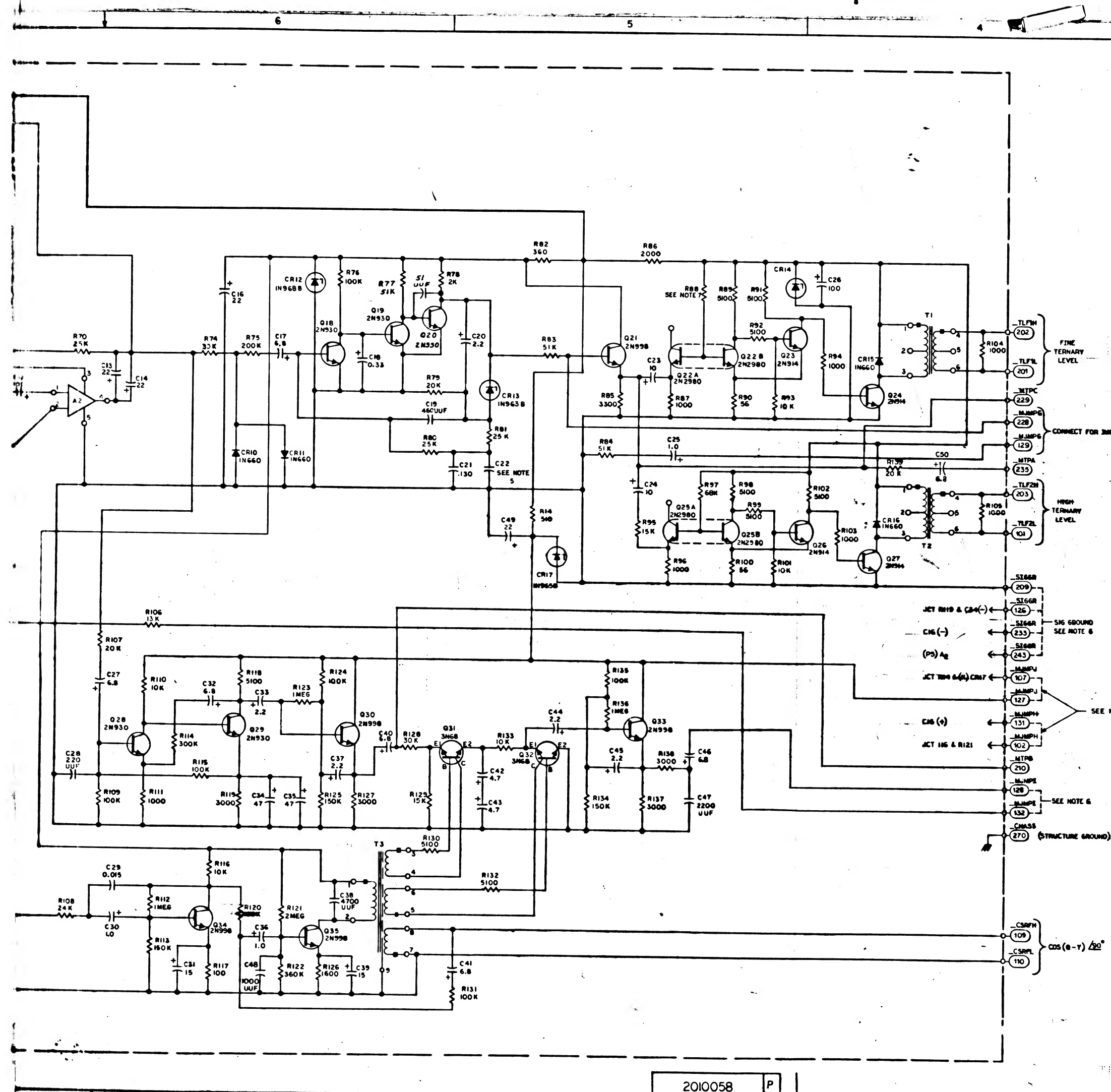
QTY REQD	PART OR IDENTIFYING NO	NAME, ADDRESS OR DESCRIPTION	DATE
LIST OF MATERIALS			
MANNED SPACECRAFT CENTER		HOUSTON, TEXAS	
SCHEMATIC MAIN SUMMING AMPL AND QUADRATURE REJECTION			
NASA APPROVAL		NASA DRAWING NO	
80230: J		2010058	

3/2010058



- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
 3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
 4. SEE DRAWING NO. 2010019 FOR SCHEMATIC
 5. THE VALUE OF C22 TO BE SELECTED AT FINAL TEST. PART TO BE SELECTED FROM CHART A
 6. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED (207), (252), (255), (261) & (168) TO (230); (103) TO (263); (145) TO (164); (144) TO (158) & (265) TO (135); (160) TO (147); (159) TO (146); (262) & (256) TO (251); (260), (250), (244) & (264) TO (208); (209), (126) & (233) TO (243); (131) TO (102); (128) TO (152); (151) & (157) TO (162); (107) TO (127)
 7. THE VALUE OF R88 TO BE SELECTED PER PS2007336, PART TO BE SELECTED FROM CHART B.

1/2010058



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377-307	RESISTOR	25 K	±0.1%	1/10 W
R2	-307				
R3	-307				
R4	-307				
R5	-333		25.708K		
R6	1006750-36		1500	±2%	1/4 W
R7	-36				
R8	-36				
R9	-36				
R10	-36				
R11	-36				
R12	-36				
R13	-36				
R14	1010604-46		510	±1%	1 W
R15	1006750-56		10 K	±2%	1/4 W
R16	-56		10 K		
R17	-60		15 K		
R18	-60				
R19	-60				
R20	-60				
R21	-60				
R22	-60				
R23	-56		10 K		
R24	-44		3300		
R25	-44				
R26	-44				
R27	-44				
R28	-44				
R29	-44				
R30	-44				
R31	-44				
R32	1010377-304		4000	±0.1%	1/10 W
R33	1010377-305		8000	±0.1%	
R34	1010733-5		8000	±1%	
R35	-5		8000		
R36	-7		16 K		
R37	-7		16 K		
R38	-7		16 K		
R39	-9		32 K		
R40	1010377-303		2.6027 K	±0.1%	
R41	1010377-302		1.9638 K	±0.1%	
R42	1010733-18		866.8	±1%	
R43	-5		409.5		
R44	-4		399.3		
R45	-3		196.8		
R46	-2		97.70		
R47	-1		97.41		
R48	1010377-313		128.146 K	±0.1%	
R49	-311		44.999 K		
R50	-310		30.067 K		
R51	-308		25.490 K		
R52	-308		25.400 K		
R53	-310		30.067 K		
R54	-311		44.999 K		
R55	-313		128.146 K		
R56	-347		125.500 K		
R57	-347		125.500 K		
R58	1010369-90		240 K	±5%	1/8 W
R59	1010369-90		240 K	±5%	1/8 W
R60	1010377-312		100 K	±0.1%	1/10 W
R61	1010377-312		100 K	±0.1%	1/10 W
R62	1010733-11		51 K	±1%	
R63	-11				
R64	-11				
R65	-11				
R66	-11				
R67	-11				
R70	1010377-307		25 K	±0.1%	1/10 W
R71					
R72					
R73					
R74	1006750-47		30 K	±2%	1/4 W
R75	1010733-119		200 K	±1%	1/10 W
R76	1006750-80		100 K	±2%	1/4 W
R77	-73		51 K		
R78	-39		2000		
R79	-63		20 K		
R80	1010733-12		25 K	±1%	1/10 W
R81	1010733-12		25 K	±1%	1/10 W
R82	1010604-45		350	±1%	1 W
R83	1006750-73		51 K	±2%	1/4 W
R84	-73		51 K		
R85	-44		3300		
R86	1010604-39		2000	±1%	1 W
R87	1006750-32		1000	±2%	1/4 W
R88	SEE NOTE 7				
R89	1006750-49		510		
R90	-49		56		
R91	-49		510		
R92	-49		510		
R93	-56		10 K		
R94	-32		1000		
R95	-60		15 K		
R96	-32		1000		
R97	-76		68 K		
R98	-49		510		
R99	-49		510		
R100	-2		56		
R101	-56		10 K		
R102	-49		510		
R103	-32		1000		
R104	-32		1000		
R105	-32		1000		
R106	-39		13 K		
R107	-63		24 K		
R108	-65		24 K		
R109	-80		100 K		
R110	-56		10 K		
R111	-32		1000		
R112	1010369-105		1MEG	±5%	1/8 W
R113	1006750-84		150 K	±2%	1/4 W
R114	1010369-92		300 K	±5%	1/8 W
R115	1006750-80		100 K	±2%	1/4 W
R116	-56		10 K		
R117	-8		100		
R118	-49		5100		
R119	-43		3000		
R120	-80		100 K		
R121	1010369-112		2MEG	±5%	1/8 W
R122	-94		340 K		
R123	-105		1MEG		
R124	1006750-80		100 K	±2%	1/4 W
R125	-84		150 K		
R126	-37		1600		

REF DES	PART NO.	DESCRIPTION	VALUE
R127	1006750-43	RESISTOR	30 K
R128	-67		30 K
R129	-60		5100
R130	-69		5100
R131	-60		100 K
R132	-49		5100
R133	-56		10 K
R134	-84		50 K
R135	-80		100 K
R136	1010369-105	1MEG	1MEG
R137	1006750-43		30 K
R138	1006750-43		30 K
R139	1006750-63		20 K
C1	1006755-14	CAPACITOR	120
C2	-85		22
C3	-85		22
C4	-79		22
C5	-79		6.8
C6	-79		22
C7	-79		22
C8	-79		22
C9	-79		22
C10	-79		22
C11	-79		22
C12	-79		22
C13	-85		100
C14	-85		22
C15	-85		22
C16	-79		22
C17	-79		22
C18	1006777-63		0.33
C19	1006900-013		8000
C20	1006755-73		2.2
C21	1010317-4		110
C22	SEE NOTE 5		
C23	1006755-81		10
C24	-81		10
C25	-69		10
C26	-14		100
C27	-79		100
C28	1006777-16		20.01
C29	1006777-39		2.01
C30	1006755-69		1.0
C31	-33		5
C32	-79		5
C33	-73		2.2
C34	-36		47
C35	-36		47
C36	-69		1.0
C37	-73		2.2
C38	1006777-28		4700
C39	1006755-33		15
C40	-79		5.8
C41	-79		5.8
C42	-10		4.7
C43	-10		4.7
C44	-73		2.2
C45	-73		2.2
C46	-79		2.2
C47	1006777-26		2000
C48	1006777-24		1000
C49	1006755-85		22
C50	1006755-79		6.8
C51	1010409-16	CAPACITOR	11 UF
CR1	1010385	DIODE	1N4001
CR2			
CR3			
CR4			
CR5			
CR6			
CR7	1010385		
CR8	1010385		
CR9	1010385		
CR10	1010385		
CR11	1010385		
CR12	1008815-12		1N4001
CR13	1008815-7		1N4001
CR14	1010372-13		
CR15	1010385		
CR16	1010385		
CR17	1008815-9		
Q1	1010343-3	TRANSISTOR	
Q2			
Q3			
Q4			
Q5			
Q6			
Q7			
Q8			
Q9			
Q10			
Q11			
Q12			
Q13			
Q14			
Q15			
Q16	1010343-3		
Q17			
Q18	1010357-1		2N930
Q19	-1		
Q20	-1		
Q21	1010342		2N930
Q22	1010652-1		2N2980
Q23	1010966-1		2N14
Q24	1010966-1		2N14
Q25	1010652-1		2N2980
Q26	1010966-1		2N14
Q27	1010966-1		2N14
Q28	1010357-1		2N930
Q29	1010357-1		2N930
Q30	1010342		2N930
Q31	1010367-001		3N68
Q32	1010367-001		3N68
Q33	1010342		2N930
Q34			
Q35			
A1	2007144	AMPLIFIER	SEE NOTE
A2	2007144	AMPLIFIER	SEE NOTE
T1	1010274	TRANSFORMER	
T2	1010274		
T3	1010274		

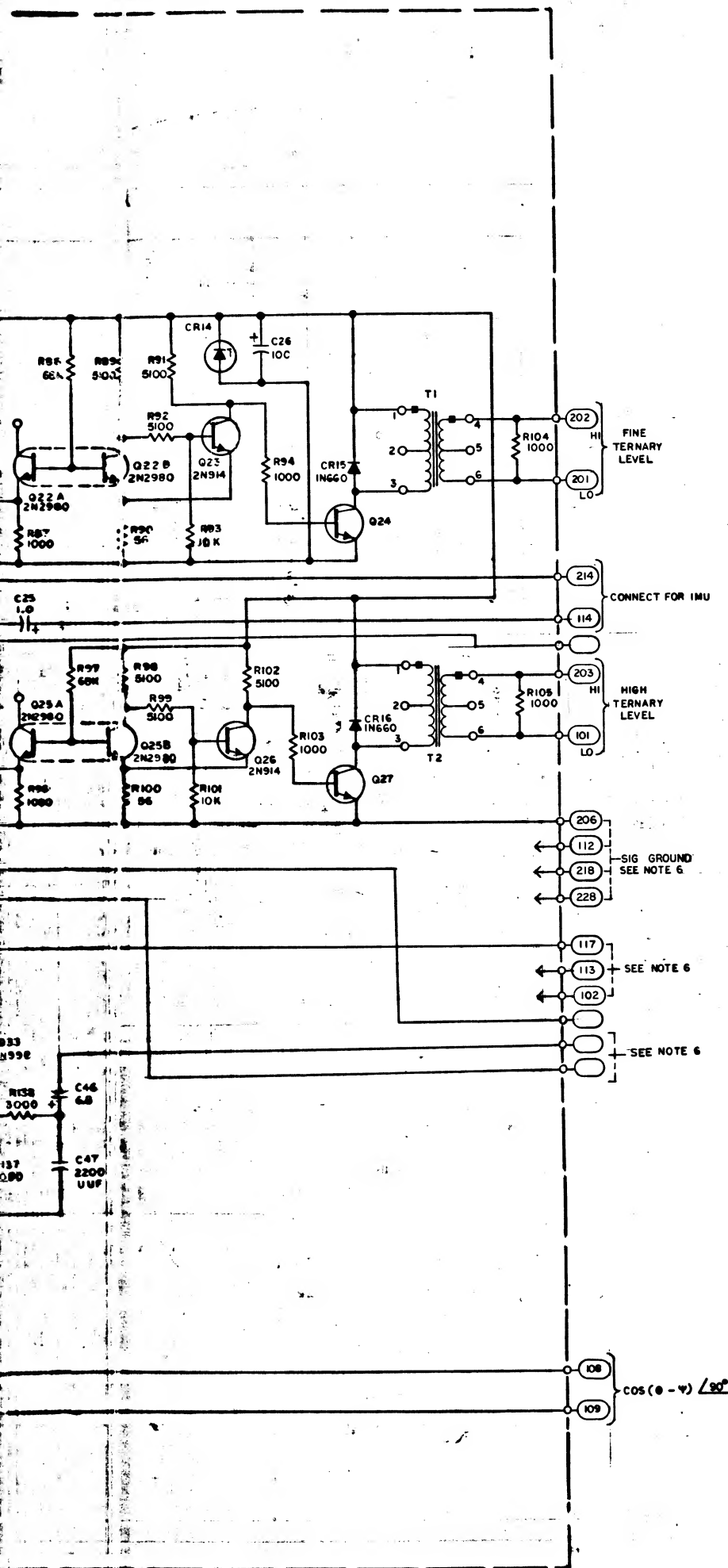
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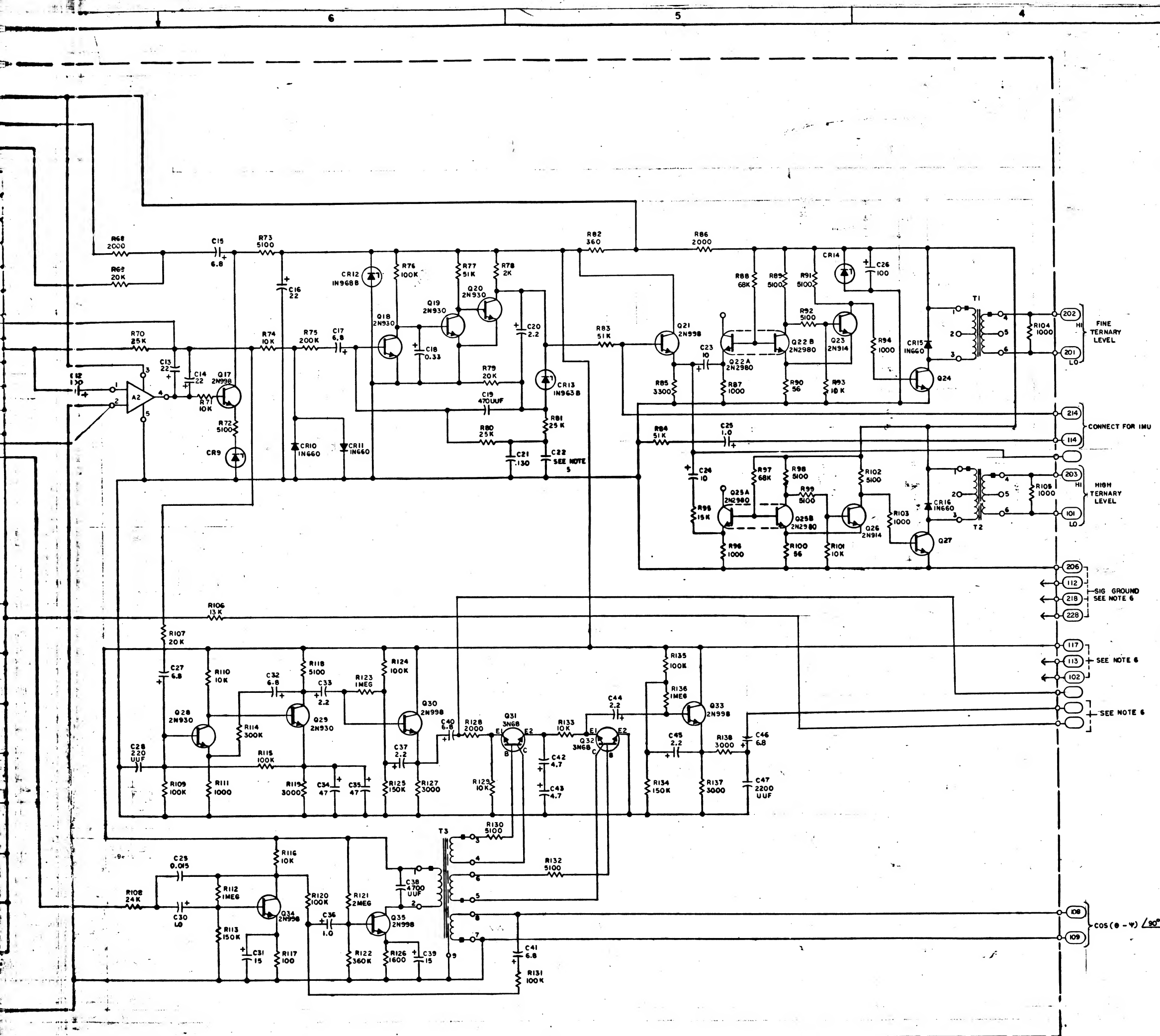


REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377-307	RESISTOR	25 K	± 0.1 %	1/10 W
R2	-307				
R3	-307				
R4	-307				
R5	-333		25.708K	± 2 %	1/4 W
R6	1006750-36		1500	± 2 %	1/4 W
R7	-36				
R8	-36				
R9	-36				
R10	-36				
R11	-36				
R12	-36				
R13	-36				
R15	-56		10 K		
R16	-56		10 K		
R17	-60		15 K		
R18	-60				
R19	-60				
R20	-60				
R21	-60				
R22	-60				
R23	-56		10 K		
R24	-44		3300		
R25	-44				
R26	-44				
R27	-44				
R28	-44				
R29	-44				
R30	-44				
R31	-44				
R32	1010377-304		4000	± 0.1 %	1/10 W
R33	1010377-305		8000	± 0.1 %	
R34	1010733-6		8000	± 1 %	
R35	-6		8000		
R36	-7		16 K		
R37	-7		16 K		
R38	-7		16 K		
R39	-9		32 K		
R40	1010377-303		2.6027 K	± 0.1 %	
R41	1010377-302		1.9638 K	± 0.1 %	
R42	1010733-16		866.9	± 1 %	
R43	-5		409.5		
R44	-4		399.3		
R45	-3		196.8		
R46	-2		97.70		
R47	-1		97.41		
R48	1010377-313		128.146K	± 0.1 %	
R49	-311		44.999 K		
R50	-310		30.067 K		
R51	-308		25.490 K		
R52	-308		25.490 K		
R53	-310		30.067 K		
R54	-311		44.999 K		
R55	-313		128.146 K		
R56	-332		125.842 K		
R57	-332		125.842 K		
R58	1010369-90		240 K	± 5 %	1/8 W
R59	1010369-90		240 K	± 5 %	1/8 W
R60	1010377-312		100 K	± 0.1 %	1/10 W
R61	1010377-312			± 0.1 %	
R62	1010733-11			± 1 %	
R63	-11				
R64	-11				
R65	-11				
R66	-11				
R67	-11				
R68	1006750-39		2000	± 2 %	1/4 W
R69	1006750-63		20 K	± 2 %	1/4 W
R70	1010733-12		25 K	± 1 %	1/10 W
R71	1006750-56		10 K	± 2 %	1/4 W
R72	-49		5100	± 2 %	
R73	-49		10 K	± 2 %	
R74	-56		10 K	± 2 %	
R75	1010733-119		200K	± 1 %	1/10 W
R76	1006750-80		100K	± 2 %	1/4 W
R77	-73		51 K		
R78	-39		2000		
R79	-63		20 K		
R80	1010733-12		25 K	± 1 %	1/10 W
R81	1010733-12		25 K	± 1 %	1/10 W
R82	1010604-45		360	± 1 %	1 W
R83	1006750-73		51 K	± 2 %	1/4 W
R84	-73		51 K		
R85	-44		3300		
R86	1010604-39		2000	± 1 %	1 W
R87	1006750-32		1000	± 2 %	1/4 W
R88	-76		68K		
R89	-49		5100		
R90	-2		5		
R91	-49		5100		
R92	-56		10 K		
R93	-32		1000		
R94	-60		15 K		
R95	-32		1000		
R96	-76		68K		
R97	-49		5100		
R98	-49		5100		
R99	-49		5100		
R100	-2		5		
R101	-56		10 K		
R102	-49		5100		
R103	-32		1000		
R104	-32		1000		
R105	-32		1000		
R106	-59		13 K		
R107	-63		20 K		
R108	-65		24 K		
R109	-80		100 K		
R110	-56		10 K		
R111	-32		1000		
R112	1010369-105		1MEG	± 5 %	1/8 W
R113	1006750-84		150 K	± 2 %	1/4 W
R114	1010369-92		300K	± 5 %	1/8 W
R115	1006750-80		100 K	± 2 %	1/4 W
R116	-56		10 K		
R117	-8		100		
R118	-49		5100		
R119	-43		3000		
R120	-80		100K		
R121	1010369-112		2MEG	± 5 %	1/8 W
R122	-94		350K		
R123	-105		1MEG		
R124	1006750-80		100 K	± 2 %	1/4 W
R125	-84		150 K		
R126	-37		1600		

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R127	1006750-43	RESISTOR	3000	± 2 %	1/4 W
R128	-39		2000		
R129	-56		10 K		
R130	-49		5100		
R131	-80		100K		
R132	-49		5100		
R133	-56		10 K		
R134	-84		150 K		
R135	-80		100K		
R136	1010369-105		1MEG	± 5 %	1/8 W
R137	1006750-43		3000	± 2 %	1/4 W
R138	1006750-43		3000	± 2 %	1/4 W
C1	1006755-14	CAPACITOR	100	± 10 %	10 VDC
C2	-85		22		35 VDC
C3	-85		22		
C4	-79		6.8		
C5	-79				
C6	-79				
C7	-79				
C8	-79				
C9	-79				
C10	-79				
C11	-79				
C12	-14		100		10 VDC
C13	-85		22		35 VDC
C14	-85		22		
C15	-79		6.8		
C16	-85		22		
C17	-79		6.8		
C18	-63		0.33		
C19	1006777-20		470 UUF		100 VDC
C20	1006755-73		2.2		35 VDC
C21	1010317-4		.130	± 1 %	35 VDC
C22	SEE NOTE 5				
C23	1006755-81		10	± 10 %	35 VDC
C24	-81		10		
C25	-69		1.0		
C26	-14		100		10 VDC
C27	-79		6.8		35 VDC
C28	1006777-16		220 UUF		100 VDC
C29	1006777-39		0.015		35 VDC
C30	1006755-69		1.0		35 VDC
C31	-33		15		20 VDC
C32	-79		6.8		35 VDC
C33	-73		2.2		35 VDC
C34	-36		47		20 VDC
C35	-36		47		20 VDC
C36	-69		1.0		35 VDC
C37	-73		2.2		35 VDC
C38	1006777-28		4700 UUF		100 VDC
C39	1006755-33		15		20 VDC
C40	-79		6.8		35 VDC
C41	-79		6.8		35 VDC
C42	-10		4.7		10 VDC
C43	-10		4.7		10 VDC
C44	-73		2.2		35 VDC
C45	-73		2.2		
C46	-79		6.8		
C47	1006777-26		2200 UUF		100 VDC
CR1	1010385	DIODE	IN660		
CR2					
CR3					
CR4					
CR5					
CR6					
CR7					
CR8					
CR9	1010372-15		IN660		
CR10	1010385		IN660		
CR11	1010385		IN660		
CR12	1010286-12		IN968B		
CR13	1010286-7		IN968B		
CR14	1010372-13		IN660		
CR15	1010385		IN660		
CR16	1010385		IN660		
Q1	1010343-3	TRANSISTOR			
Q2					
Q3					
Q4					
Q5					
Q6					
Q7					
Q8					
Q9					
Q10					
Q11					
Q12					
Q13					
Q14					
Q15					
Q16					
Q17	1010342		2N998		
Q18	1010357-1		2N930		
Q19	-1				
Q20	-1				
Q21	1010342		2N998		
Q22	1010652-1		2N2980		
Q23	1006752		2N914		
Q24	1010343-3				
Q25	1010652-1		2N2980		
Q26	1006752		2N914		
Q27	1010343-3				
Q28	1010357-1		2N930		
Q29	1010377-1		2N930		
Q30	1010342		2N998		
Q31	1010367		3N68		
Q32	1010367		3N68		
Q33	1010342		2N998		
Q34					
Q35					
A1	2007144	AMPLIFIER	SEE NOTE 4		
A2	2007144	AMPLIFIER	SEE NOTE 4		
T1	1010274	TRANSFORMER			
T2	1010274				
T3	1010274				

CHART A	
C22	
PART NO.	VALUE
1006777-24	10000 UUF
-25	20000 UUF
-26	200 UUF
-27	3300 UUF
-28	4700 UUF
-29	5000 UUF
-30	6000 UUF
-31	.010

QTY REQD		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		PROJ NO.
LIST OF MATERIALS						
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES DO NOT SCALE THIS DRAWING MATERIAL				MANNED SPACECRAFT CENTER HOUSTON, TEXAS SCHEMATIC MAIN SUMMING AMPL AND QUADRATURE REJECTION 2010058		
NEXT ASSY		USED ON		DATE PREPARED		SCALE
APPLICATION		DATE PREPARED		DATE APPROVED		DATE

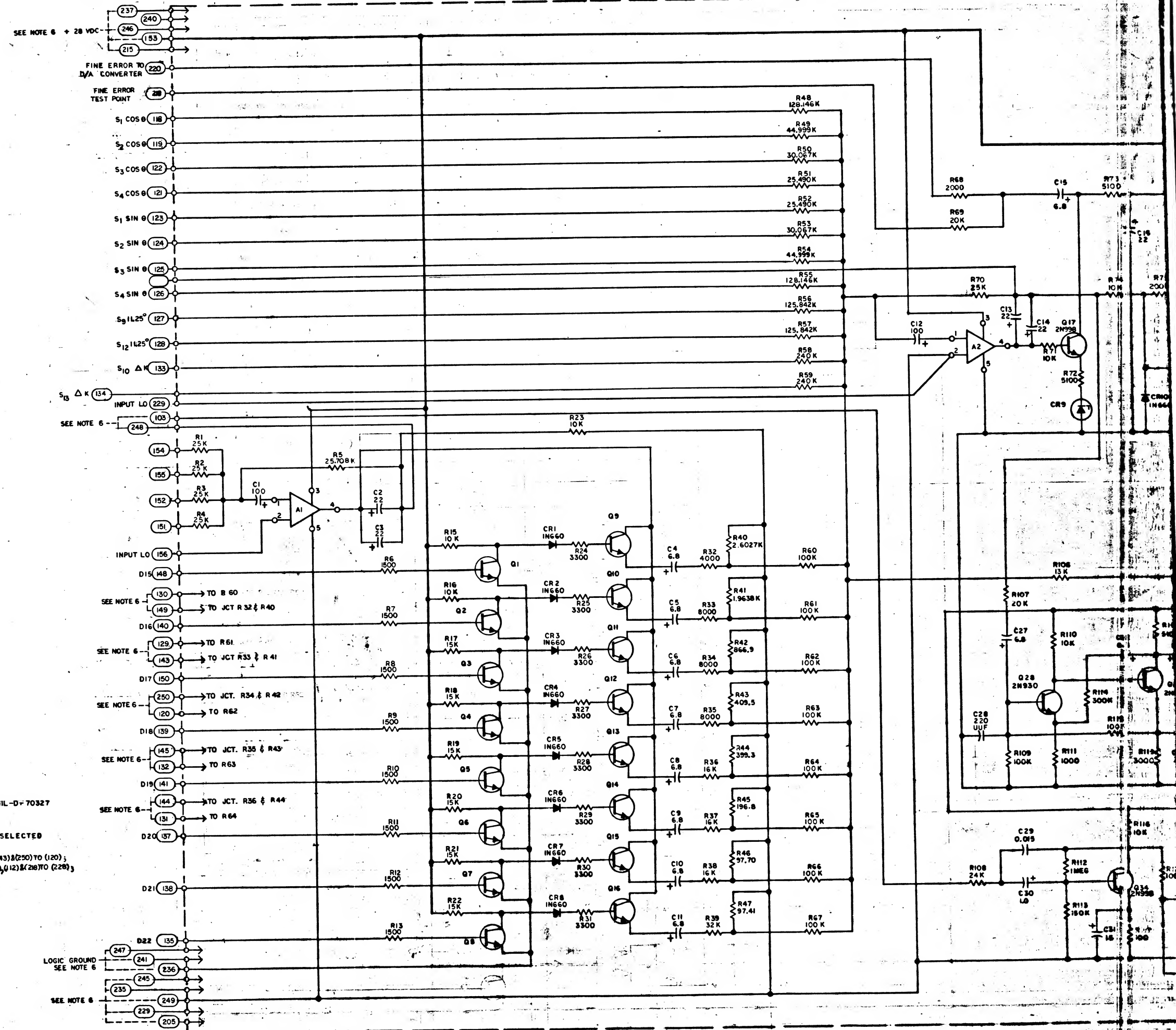


2010058

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377-307	RESISTOR	25K	±0.1%	1/10W
R2	-307				
R3	-307				
R4	-307				
R5	1006750-333		25.708K	±2%	1/4W
R6	-36		1500	±2%	1/4W
R7	-36				
R8	-36				
R9	-36				
R10	-36				
R11	-36				
R12	-36				
R13	-36				
R15	-56		10K		
R16	-56		10K		
R17	-60		15K		
R18	-60				
R19	-60				
R20	-60				
R21	-60				
R22	-60				
R23	-56		10K		
R24	-44		3300		
R25	-44				
R26	-44				
R27	-44				
R28	-44				
R29	-44				
R30	-44				
R31	1010377-304		4000	±0.1%	1/10W
R32	1010377-305		8000	±0.1%	1/10W
R34	1010733-6		8000	±1.1%	
R35	-6		8000		
R36	-7		16K		
R37	-7		16K		
R38	-7		16K		
R39	1010377-303		2.6027K	±0.1%	
R40	1010377-302		1.9638K	±0.1%	
R41	1010733-16		966.9	±1.1%	
R43	-5		409.5		
R44	-4		339.3		
R45	-3		196.8		
R46	-2		97.70		
R47	1010377-313		129.14K	±0.1%	
R48	-311		44.999K		
R50	-310		30.067K		
R51	-308		25.490K		
R52	-308		25.490K		
R53	-310		30.067K		
R54	-311		44.999K		
R55	-313		128.14K		
R56	-332		125.842K		
R57	-332		125.842K		
R58	1010369-90		240K	±5%	1/3W
R59	1010369-90		240K	±5%	1/8W
R60	1010377-312		100K	±0.1%	1/10W
R61	1010377-312		100K	±0.1%	1/10W
R62	1010733-11			±1%	
R63	-11				
R64	-11				
R65	-11				
R66	-11				
R67	-11				
R68	1006750-39		2000	±2%	1/4W
R69	1006750-63		20K	±2%	1/4W
R70	1010733-12		25K	±1.1%	1/10W
R71	1006750-56		10K	±2%	1/4W
R72	-49		5100	±2%	
R73	-56		10K	±2%	1/10W
R74	-56		10K	±2%	1/10W
R75	1010733-119		200K	±1%	1/10W
R76	1006750-80		100K	±2%	1/4W
R77	-73		51K		
R78	-39		2000		
R79	-63		20K		
R80	1010733-12		25K	±1.1%	1/10W
R81	1010733-12		25K	±1.1%	1/10W
R82	1010604-48		360	±1%	1W
R83	1006750-73		51K	±2%	1/4W
R84	-73		51K		
R85	-44		3300		
R86	1010604-39		2000	±1%	1W
R87	1006750-32		1000	±2%	1/4W
R88	-76		68K		
R89	-49		5100		
R90	-56		5100		
R91	-49		5100		
R92	-49		5100		
R93	-56		10K		
R94	-32		1000		
R95	-60		15K		
R96	-32		1000		
R97	-76		68K		
R98	-49		5100		
R99	-49		5100		
R100	-2		86		
R101	-56		10K		
R102	-49		5100		
R103	-32		1000		
R104	-32		1000		
R105	-32		1000		
R106	-59		13K		
R107	-63		24K		
R108	-65		24K		
R109	-80		100K		
R110	-56		10K		
R111	-32		1000		
R112	1010369-105		1MEG	±1%	1/8W
R113	1006750-84		150K	±2%	1/4W
R114	1010369-92		300K	±1%	1/8W
R115	1006750-80		100K	±2%	1/4W
R116	-56		10K		
R117	-8		100		
R118	-49		5100		
R119	-43		3000		
R120	-80		100K		
R121	1010369-112		2MEG	±1%	1/8W
R122	-94		360K		
R123	-105		1MEG		
R124	1006750-84		150K	±2%	1/4W
R125	-84		150K		
R126	-37		1600		

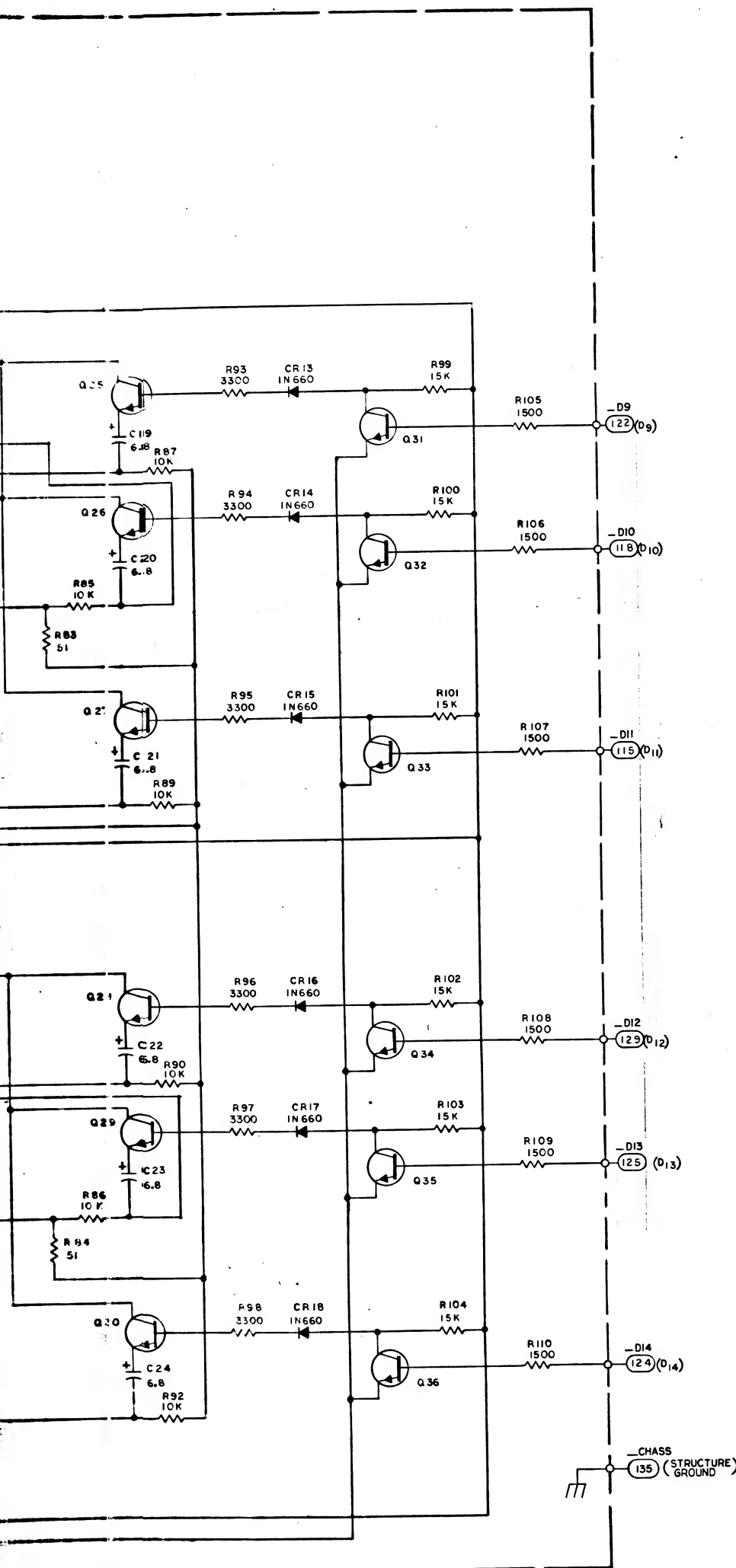
REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R127	1006750-43				
R128	-39				
R129	-56				
R130	-30				
R131	-30				
R132	-18				
R133	-56				
R134	-84				
R135	-80				
R136	1003389-105				
R137	1006750-43				
R138	1006750-43				
C1	003755-14	CLAPAC			
C2	-85				
C3	-85				
C4	-79				
C5	-79				
C6	-79				
C7	-79				
C8	-79				
C9	-79				
C10	-79				
C11	-79				
C12	-14				
C13	-85				
C14	-85				
C15	-79				
C16	-85				
C17	-79				
C18	-63				
C19	1006777-20				
C20	1006755-73				
C21	1010317				
C22	SEE NOTE 5				
C23	1006755-81				
C24	-81				
C25	-69				
C26	-14				
C27	-79				
C28	1006777-16				
C29	1006777-19				
C30	1006755-69				
C31	-33				
C32	-79				
C33	-73				
C34	-36				
C35	-36				
C36	-69				
C37	1006777-28				
C38	1006755-33				

SEE NOTE 6 + 28 VDC



- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
 3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
 4. SEE DRAWING NO. 2010019 FOR SCHEMATIC
 5. THE VALUE OF C22 TO BE SELECTED AT FINAL TEST, PART TO BE SELECTED FROM CHART A
 6. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (237), (240), (246) & (153) TO (215); (103) TO (248); (130) TO (149); (129) TO (143) & (250) TO (120); (145) TO (132); (144) TO (131); (247) & (241) TO (238); (245), (235), (249) & (229) TO (205); (206), (112) & (218) TO (228); (117) & (113) TO (102); () TO ()

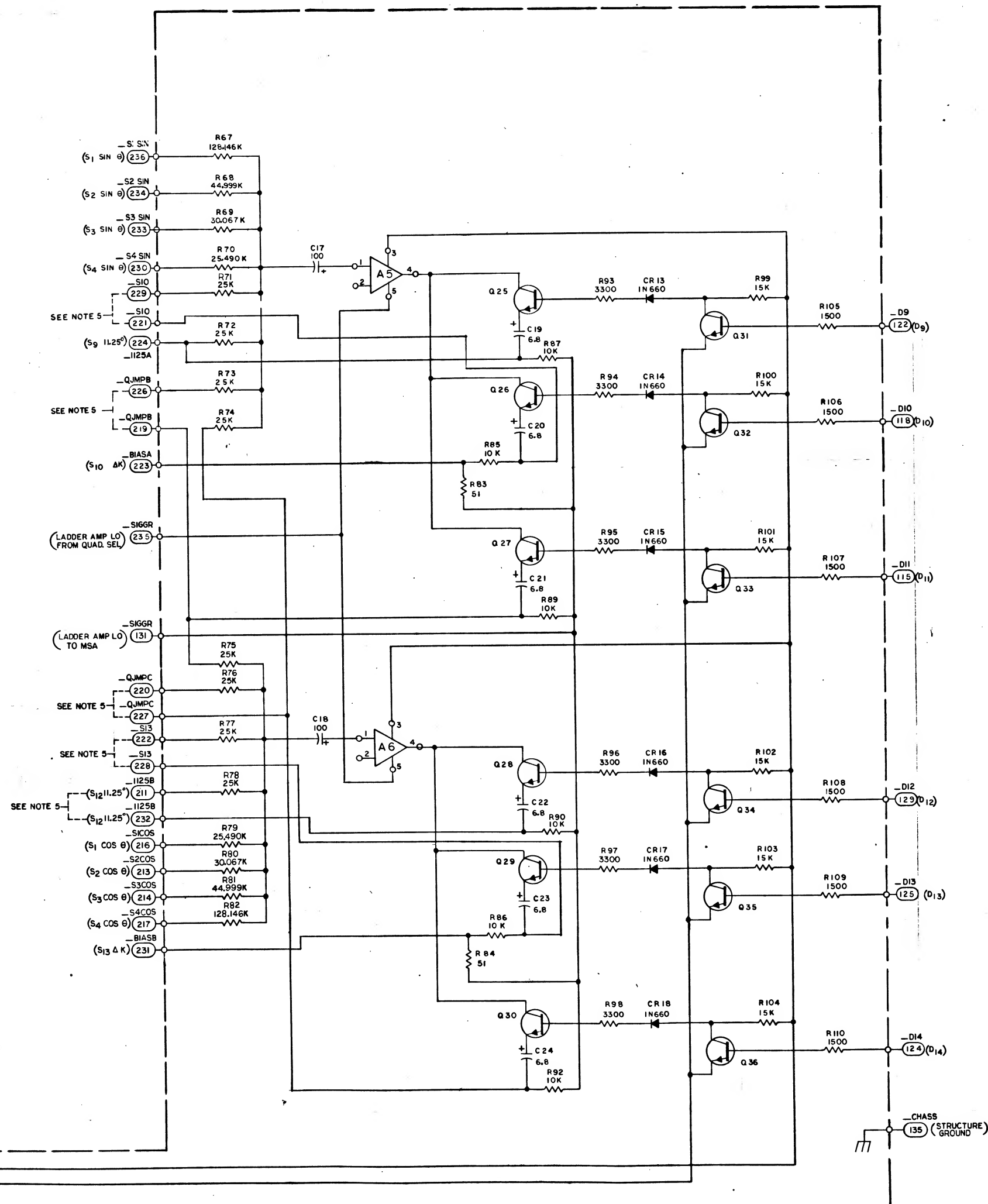
34



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377 -309	RESISTOR	30 K	±0.1%	1/4 W
R2	-306		12.5 K		
R3	-309		30 K		
R4	-334		25.009K		
R5	-307		25 K		
R6	-307				
R7	-307				
R8	-307				
R9	1010733 -12		25 K	±1%	
R10	1006750 -56		10 K	±2%	1/4 W
R11	-				
R12	-				
R13	-				
R14	-				
R15	-				
R16	-44		3300		
R17	-				
R18	-				
R19	-				
R20	-				
R21	-				
R22	-60		15 K		
R23	-				
R24	-				
R25	-				
R26	-				
R27	-				
R28	-36		1500		
R29	-				
R30	-				
R31	-				
R32	-				
R33	-				
R34	1010377 -309		30 K	±0.1%	1/4 W
R35	-309		30 K		
R36	-307		25 K		
R37	-307		25 K		
R38	-307		25 K		
R39	-306		12.5 K		
R40	-307		25 K		
R41	-334		25.009K		
R42	1010733 -12		25 K	±1%	
R43	1006750 -56		10 K	±2%	1/4 W
R44	-				
R45	-				
R46	-				
R47	-				
R48	-				
R49	-44		3300		
R50	-				
R51	-				
R52	-				
R53	-				
R54	-				
R55	-60		15 K		
R56	-				
R57	-				
R58	-				
R59	-				
R60	-				
R61	-36		1500		
R62	-				
R63	-				
R64	-				
R65	-				
R66	-				
R67	1010377 -313		1284.46K	±0.1%	1/4 W
R68	-311		44.999K		
R69	-310		30.067K		
R70	-308		25.490K		
R71	-307		25 K		
R72	-				
R73	-				
R74	-				
R75	-				
R76	-				
R77	-				
R78	-				
R79	-308		25.490 K		
R80	-310		30.067 K		
R81	-311		44.999 K		
R82	-313		128.446 K		
R83	1006750 -1		51	±2%	1/4 W
R84	-		10 K		
R85	-56				
R86	-				
R87	-				
R88	-				
R89	-				
R90	-				
R91	-				
R92	-				
R93	-44		3300		
R94	-				
R95	-				
R96	-				
R97	-				
R98	-				
R99	-60		15 K		
R100	-				
R101	-				
R102	-				
R103	-				
R104	-36		1500		
R105	-				
R106	-				
R107	-				
R108	-				
R109	-				
R110	-				

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
C1	1006755 -14	CAPACITOR	100	±10%	10 VDC
C2	-		100		10 VDC
C3	-79		6.8		35VDC
C4	-79		6.8		35VDC
C5	-79		6.8		35VDC
C6	-79		6.8		35VDC
C7	-79		6.8		35VDC
C8	-79		6.8		35VDC
C9	-14		100		10 VDC
C10	-14		100		10 VDC
C11	-79		6.8		35VDC
C12	-79		6.8		35VDC
C13	-79		6.8		35VDC
C14	-79		6.8		35VDC
C15	-79		6.8		35VDC
C16	-79		6.8		35VDC
C17	-14		100		10 VDC
C18	-14		100		10 VDC
C19	-79		6.8		35VDC
C20	-79		6.8		35VDC
C21	-79		6.8		35VDC
C22	-79		6.8		35VDC
C23	-79		6.8		35VDC
C24	-79		6.8		35VDC
CR1	1010385	DIODE	IN660		
CR2	-				
CR3	-				
CR4	-				
CR5	-				
CR6	-				
CR7	-				
CR8	-				
CR9	-				
CR10	-				
CR11	-				
CR12	-				
CR13	-				
CR14	-				
CR15	-				
CR16	-				
CR17	-				
CR18	-				
Q1	1010343 -3	TRANSISTOR			
Q2	-				
Q3	-				
Q4	-				
Q5	-				
Q6	-				
Q7	-				
Q8	-				
Q9	-				
Q10	-				
Q11	-				
Q12	-				
Q13	-				
Q14	-				
Q15	-				
Q16	-				
Q17	-				
Q18	-				
Q19	-				
Q20	-				
Q21	-				
Q22	-				
Q23	-				
Q24	-				
Q25	-				
Q26	-				
Q27	-				
Q28	-				
Q29	-				
Q30	-				
Q31	-				
Q32	-				
Q33	-				
Q34	-				
Q35	-				
Q36	-				
A1	2007144	AMPLIFIER	SEE NOTE 4		
A2	-				
A3	-				
A4	-				
A5	-				
A6	-				

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	PRD NO.
LIST OF MATERIALS			
MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
SCHEMATIC QUADRANT SELECTOR			
NASA DRAWING NO. 2010059			
SCALE: 1/4" = 1"			
SHEET 1 OF 1			



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377 -309	RESISTOR	30K	±0.1%	1/10 W
R2	-306		12.5K		
R3	-309		30K		
R4	-334		25.009K		
R5	-307		25K		
R6	-307				
R7	-307				
R8	-307				
R9	1010733 -12		25K	±1%	
R10	1006750 -56		10K	±2%	1/4 W
R11					
R12					
R13					
R14					
R15					
R16	-44		3300		
R17					
R18					
R19					
R20					
R21					
R22	-60		15K		
R23					
R24					
R25					
R26					
R27					
R28	-56		1500		
R29					
R30					
R31					
R32					
R33					
R34	1010377 -309		30K	±0.1%	1/10 W
R35	-309		30K		
R36	-307		25K		
R37	-307		25K		
R38	-307		25K		
R39	-306		12.5K		
R40	-307		25K		
R41	-334		25.009K		
R42	1010733 -12		25K	±1%	
R43	1006750 -56		10K	±2%	1/4 W
R44					
R45					
R46					
R47					
R48					
R49	-44		3300		
R50					
R51					
R52					
R53					
R54					
R55	-60		15K		
R56					
R57					
R58					
R59					
R60	-36		1500		
R61					
R62					
R63					
R64					
R65					
R66					
R67	1010377 -313		128.146K	±0.1%	1/10 W
R68	-311		44.999K		
R69	-310		30.067K		
R70	-308		25.490K		
R71	-307		25K		
R72					
R73					
R74					
R75					
R76					
R77					
R78					
R79	-308		25.490K		
R80	-310		30.067K		
R81	-311		44.999K		
R82	-313		128.146K	±2%	1/4 W
R83	1006750 -1		51	±2%	1/4 W
R84	-1		51		
R85	-56		10K		
R86					
R87					
R89					
R90					
R92					
R93	-44		3300		
R94					
R95					
R96					
R97					
R98	-60		15K		
R99					
R100					
R101					
R102					
R103					
R104	-36		1500		
R105					
R106					
R107					
R108					
R109					
R110					

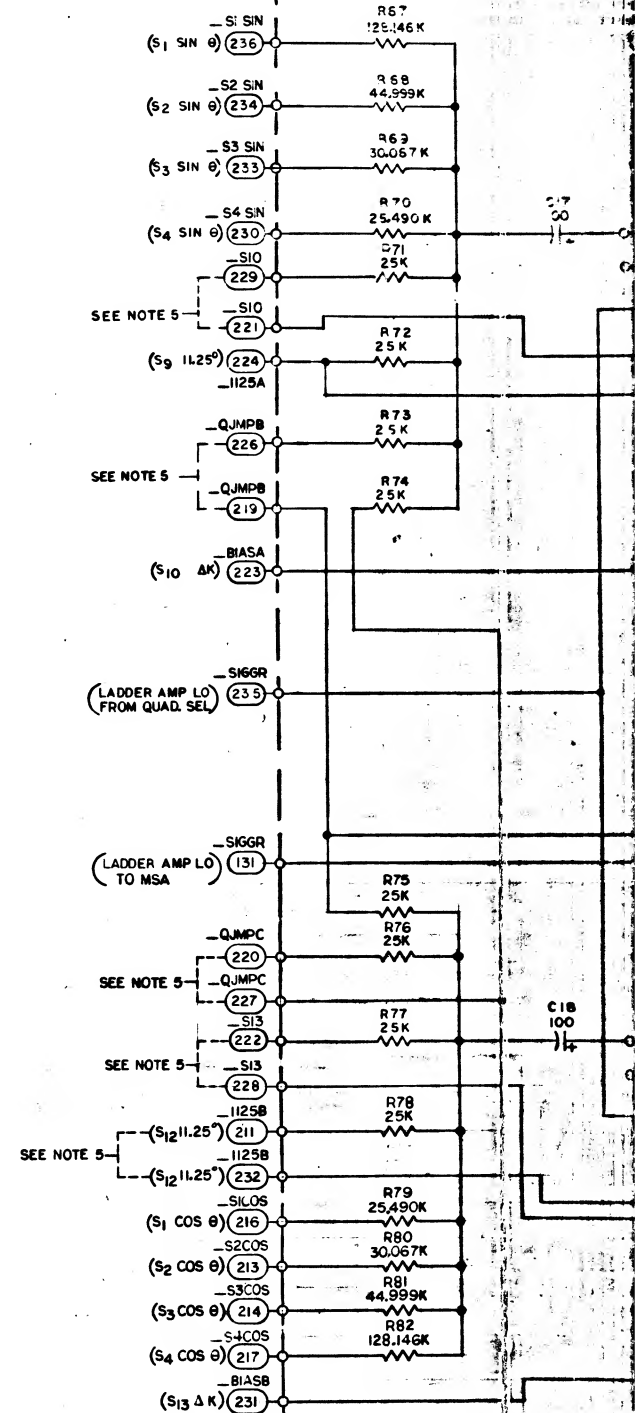
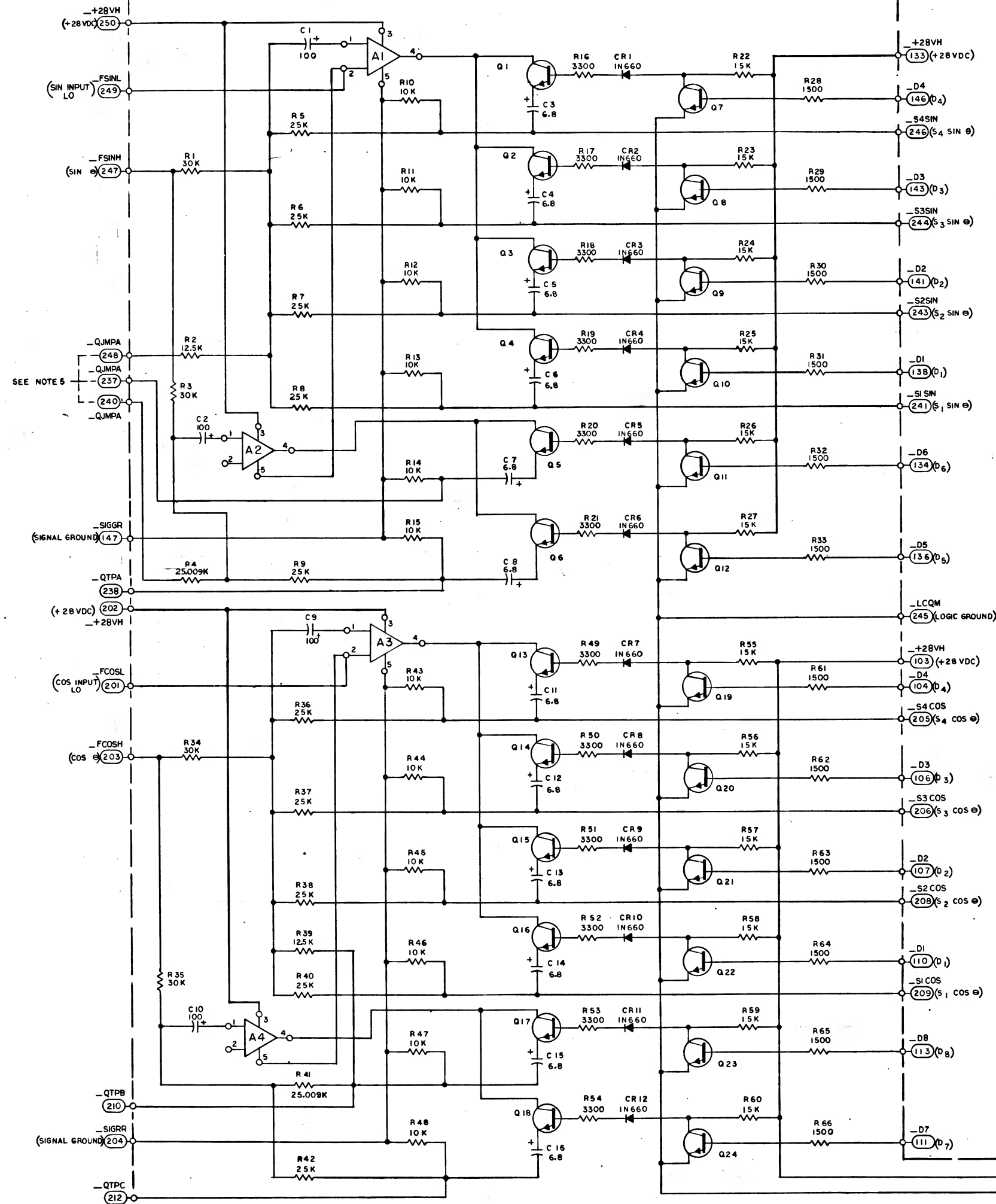
REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
C1	1006755 -14	CAPACITOR	100	±10%	10 VDC
C2	-4		100		10 VDC
C3	-79		6.8		35VDC
C4	-79		6.8		35VDC
C5	-79		6.8		35VDC
C6	-79		6.8		35VDC
C7	-79		6.8		35VDC
C8	-79		6.8		35VDC
C9	-4		100		10 VDC
C10	-4		100		10 VDC
C11	-79		6.8		35VDC
C12	-79		6.8		35VDC
C13	-79		6.8		35VDC
C14	-79		6.8		35VDC
C15	-79		6.8		35VDC
C16	-79		6.8		35VDC
C17	-4		100		10 VDC
C18	-14		100		10 VDC
C19	-79		6.8		35VDC
C20	-79		6.8		35VDC
C21	-79		6.8		35VDC
C22	-79		6.8		35VDC
C23	-79		6.8		35VDC
C24	-79		6.8		35VDC
CR1	1010385	DIODE	IN660		
CR2					
CR3					
CR4					
CR5					
CR6					
CR7					
CR8					
CR9					
CR10					
CR11					
CR12					
CR13					
CR14					
CR15					
CR16					
CR17					
CR18					
Q1	1010343 -3	TRANSISTOR			
Q2					
Q3					
Q4					
Q5					
Q6					
Q7					
Q8					
Q9					
Q10					
Q11					
Q12					
Q13					
Q14					
Q15					
Q16					
Q17					
Q18					
Q19					
Q20					
Q21					
Q22					
Q23					
Q24					
Q25					
Q26					
Q27					
Q28					
Q29					
Q30					
Q31					
Q32					
Q33					
Q34					
Q35					
Q36					
A1	2007144	AMPLIFIER	SEE NOTE 4		
A2					
A3					
A4					
A5					
A6					

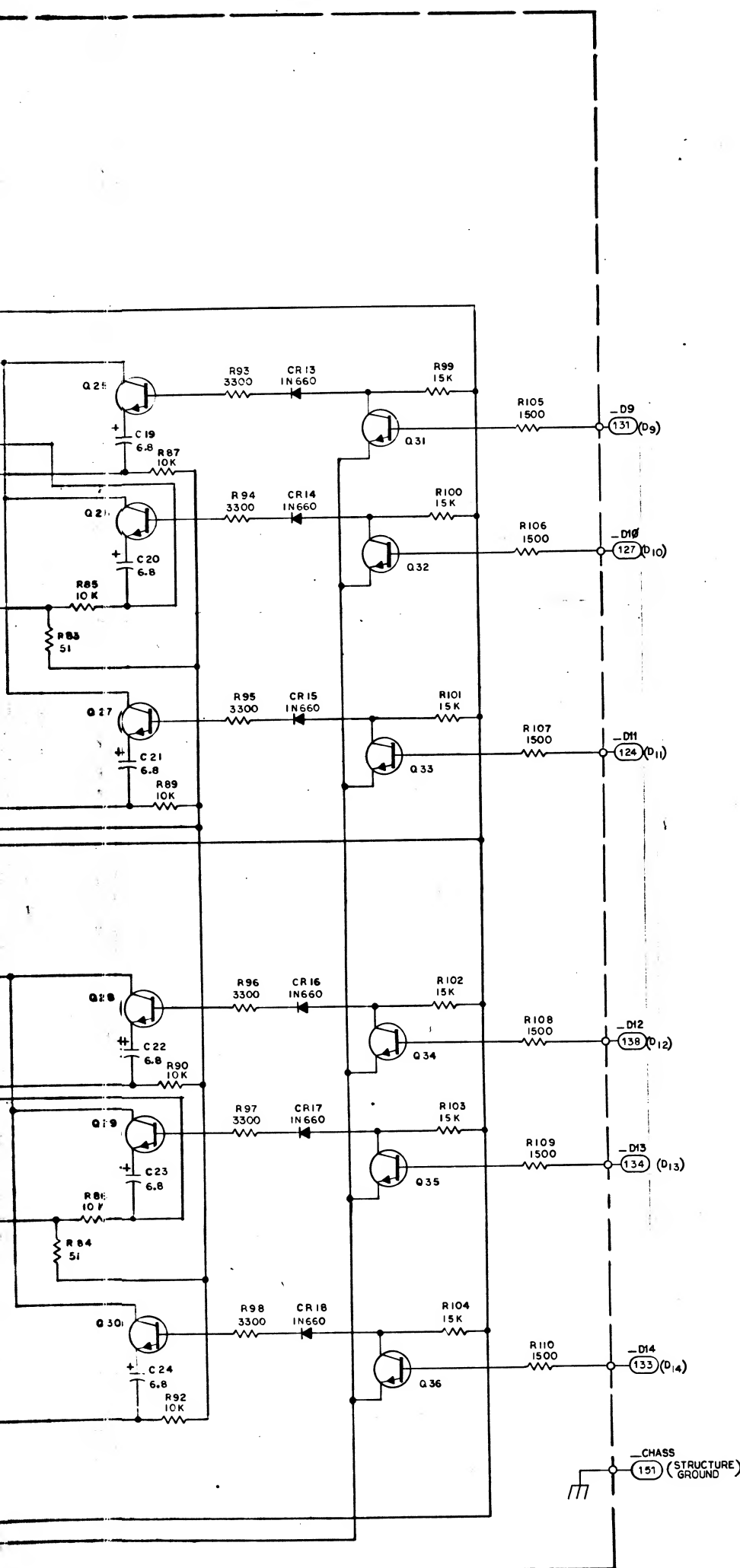
MASTER

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS.
3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS.
4. SEE DRAWING NO. 2010C9 FOR SCHEMATIC.
5. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (248) & (237) TO (240); (229) TO (221); (226) TO (219); (220) TO (227); (222) TO (228); (211) TO (232).

NOTES:

- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
- UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS.
- UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS.
- SEE DRAWING NO. 2010C9 FOR SCHEMATIC.
- FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (248) & (237) TO (240); (229) TO (221); (226) TO (219); (220) TO (227); (222) TO (228); (211) TO (232).



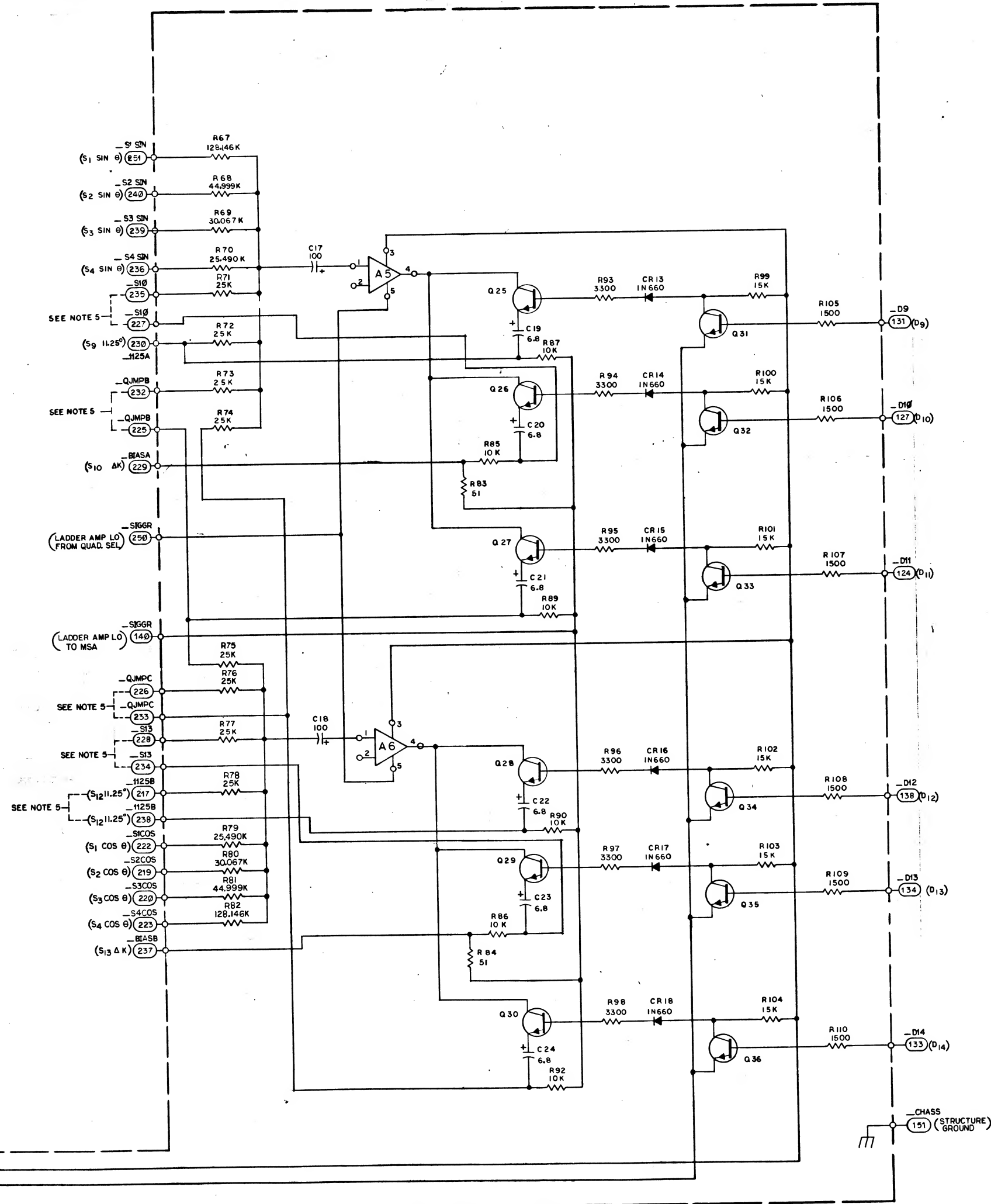


REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010377 -309	RESISTOR	30K	±0.1%	1/10 W
R2	-306		12.5K		
R3	-309		30K		
R4	-334		25.009K		
R5	-307		25K		
R6	-307				
R7	-307				
R8	-307				
R9	1010733 -12		25K	±1%	
R10	1006750 -56		10K	±2%	1/4 W
R11					
R12					
R13					
R14					
R15					
R16	-44		3300		
R17					
R18					
R19					
R20					
R21					
R22	-60		15K		
R23					
R24					
R25					
R26					
R27					
R28	-36		1500		
R29					
R30					
R31					
R32					
R33					
R34	1010377 -309		30K	±0.1%	1/10 W
R35	-309		30K		
R36	-307		25K		
R37	-307		25K		
R38	-307		25K		
R39	-306		12.5K		
R40	-307		25.009K		
R41	-334		25K	±1%	
R42	1010733 -12		25K	±1%	
R43	1006750 -56		10K	±2%	1/4 W
R44					
R45					
R46					
R47					
R48	-44		3300		
R49					
R50					
R51					
R52					
R53					
R54					
R55	-60		15K		
R56					
R57					
R58					
R59					
R60					
R61	-36		1500		
R62					
R63					
R64					
R65					
R66					
R67	1010377 -313		128.146K	±0.1%	1/10 W
R68	-311		44.999K		
R69	-310		30.067K		
R70	-308		25.490K		
R71	-307		25K		
R72					
R73					
R74					
R75					
R76					
R77					
R78					
R79	-308		25.490K		
R80	-310		30.067K		
R81	-311		44.999K		
R82	-313		128.146K		
R83	1006750 -1		51	±2%	1/4 W
R84	-56		10K		
R85					
R86					
R87					
R88					
R89					
R90					
R91					
R92	-44		3300		
R93					
R94					
R95					
R96					
R97					
R98					
R99	-60		15K		
R100					
R101					
R102					
R103					
R104	-36		1500		
R105					
R106					
R107					
R108					
R109					
R110					

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
C1	1006755 -14	CAPACITOR	100	±10%	10 VDC
C2	-14		100		10 VDC
C3	-79		6.8		35VDC
C4	-79		6.8		35VDC
C5	-79		6.8		35VDC
C6	-79		6.8		35VDC
C7	-79		6.8		35VDC
C8	-79		6.8		35VDC
C9	-14		100		10 VDC
C10	-14		100		10 VDC
C11	-79		6.8		35VDC
C12	-79		6.8		35VDC
C13	-79		6.8		35VDC
C14	-79		6.8		35VDC
C15	-79		6.8		35VDC
C16	-79		6.8		35VDC
C17	-14		100		10 VDC
C18	-14		100		10 VDC
C19	-79		6.8		35VDC
C20	-79		6.8		35VDC
C21	-79		6.8		35VDC
C22	-79		6.8		35VDC
C23	-79		6.8		35VDC
C24	-79		6.8		35VDC
CR1	1010385	DIODE	IN660		
CR2					
CR3					
CR4					
CR5					
CR6					
CR7					
CR8					
CR9					
CR10					
CR11					
CR12					
CR13					
CR14					
CR15					
CR16					
CR17					
CR18					
Q1	1010343 -3	TRANSISTOR			
Q2					
Q3					
Q4					
Q5					
Q6					
Q7					
Q8					
Q9					
Q10					
Q11					
Q12					
Q13					
Q14					
Q15					
Q16					
Q17					
Q18					
Q19					
Q20					
Q21					
Q22					
Q23					
Q24					
Q25					
Q26					
Q27					
Q28					
Q29					
Q30					
Q31					
Q32					
Q33					
Q34					
Q35					
Q36					
A1	2007144	AMPLIFIER	SEE NOTE 4		
A2					
A3					
A4					
A5					
A6					

QTY REQD	PART OR IDENTIFYING NO.	DESCRIPTION OR NOMENCLATURE OR HOUSING, TEXAS	REV NO.
LIST OF MATERIALS			
MANNED SPACECRAFT CENTER			
HOUSTON, TEXAS			
SCHEMATIC QUADRANT SELECTOR			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		INSTRUMENTATION	
TOLERANCES ON		DRAWN BY DATE	
FRACTIONS DECIMALS ANGLES		CHECKED BY DATE	
DO NOT SCALE THIS DRAWING		APPROVED BY DATE	
MATERIAL		NASA APPROVAL	
HEAT TREATMENT		CODE IDENT NO. SIZE	
NEXT ASSY USED ON		SCALE WT	
APPLICATION		SHEET 1 OF 1	



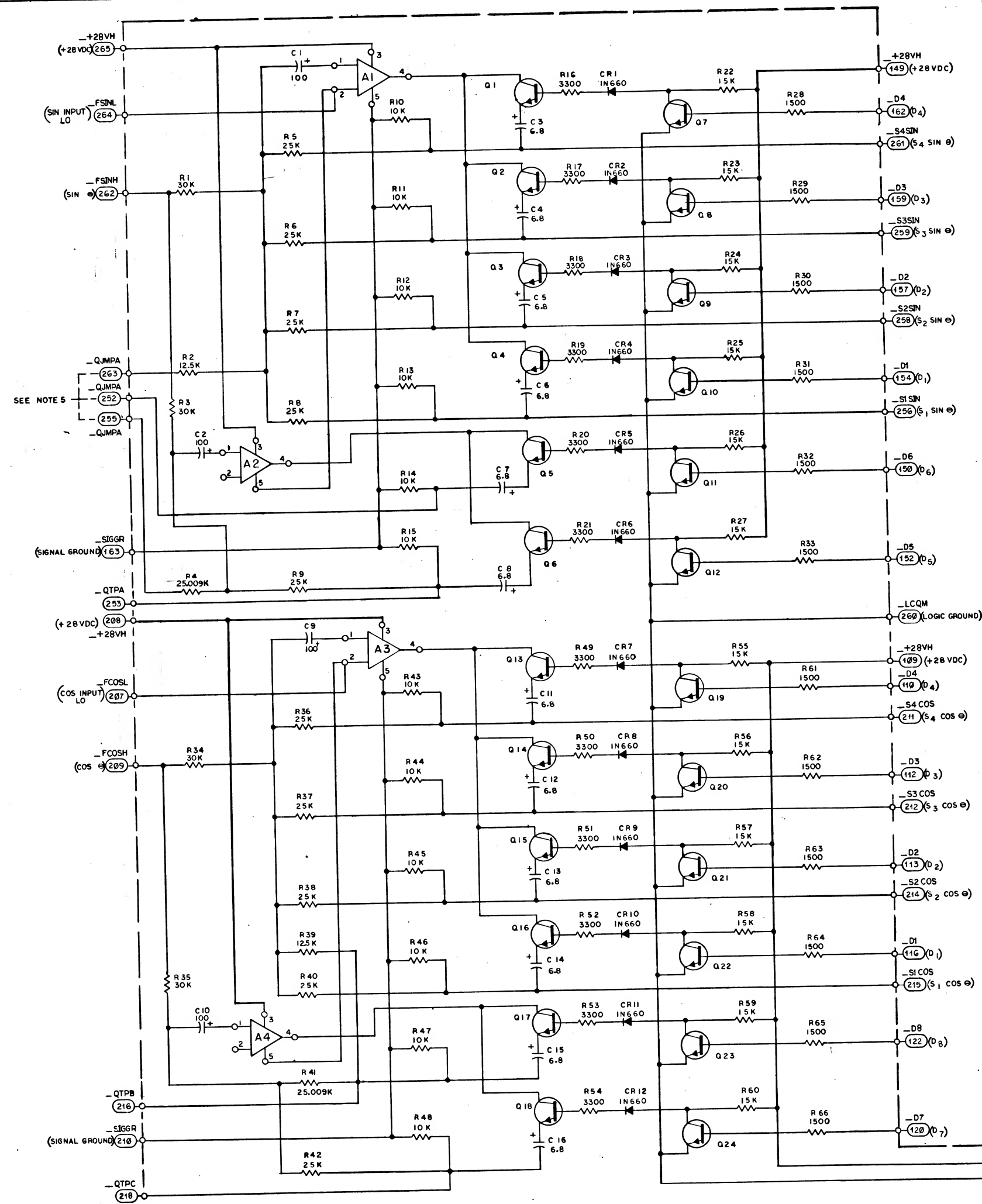


REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	100377 -309	RESISTOR	30 K	±0.1%	1/10 W
R2	-306		12.5 K		
R3	-309		30 K		
R4	-334		25.009K		
R5	-307		25 K		
R6	-307				
R7	-307				
R8	-307				
R9	1010733 -12		25 K	±1%	
R10	1006750 -56		10 K	±2%	1/4 W
R11	-				
R12	-				
R13	-				
R14	-				
R15	-				
R16	-44		3300		
R17	-				
R18	-				
R19	-				
R20	-				
R21	-				
R22	-60		15 K		
R23	-				
R24	-				
R25	-				
R26	-				
R27	-				
R28	-36		1500		
R29	-				
R30	-				
R31	-				
R32	-				
R33	-				
R34	1010377 -309		30 K	±0.1%	1/10 W
R35	-309		30 K		
R36	-307		25 K		
R37	-307		25 K		
R38	-307		25 K		
R39	-306		12.5 K		
R40	-307		25 K		
R41	-334		25.009K		
R42	1010733 -12		25 K	±1%	
R43	1006750 -56		10 K	±2%	1/4 W
R44	-				
R45	-				
R46	-				
R47	-				
R48	-				
R49	-44		3300		
R50	-				
R51	-				
R52	-				
R53	-				
R54	-				
R55	-60		15 K		
R56	-				
R57	-				
R58	-				
R59	-				
R60	-				
R61	-36		1500		
R62	-				
R63	-				
R64	-				
R65	-				
R66	-				
R67	1010377 -313		128.446K	±0.1%	1/10 W
R68	-311		44.999K		
R69	-310		30.067K		
R70	-308		25.490K		
R71	-307		25 K		
R72	-				
R73	-				
R74	-				
R75	-				
R76	-				
R77	-				
R78	-				
R79	-308		25.490 K		
R80	-310		30.067 K		
R81	-311		44.999 K		
R82	-313		128.446 K		
R83	1006750 -1		51	±2%	1/4 W
R84	-1		51		
R85	-56		10 K		
R86	-				
R87	-				
R88	-				
R89	-				
R90	-				
R91	-				
R92	-				
R93	-44		3300		
R94	-				
R95	-				
R96	-				
R97	-				
R98	-				
R99	-60		15 K		
R100	-				
R101	-				
R102	-				
R103	-				
R104	-				
R105	-36		1500		
R106	-				
R107	-				
R108	-				
R109	-				
R110	-				

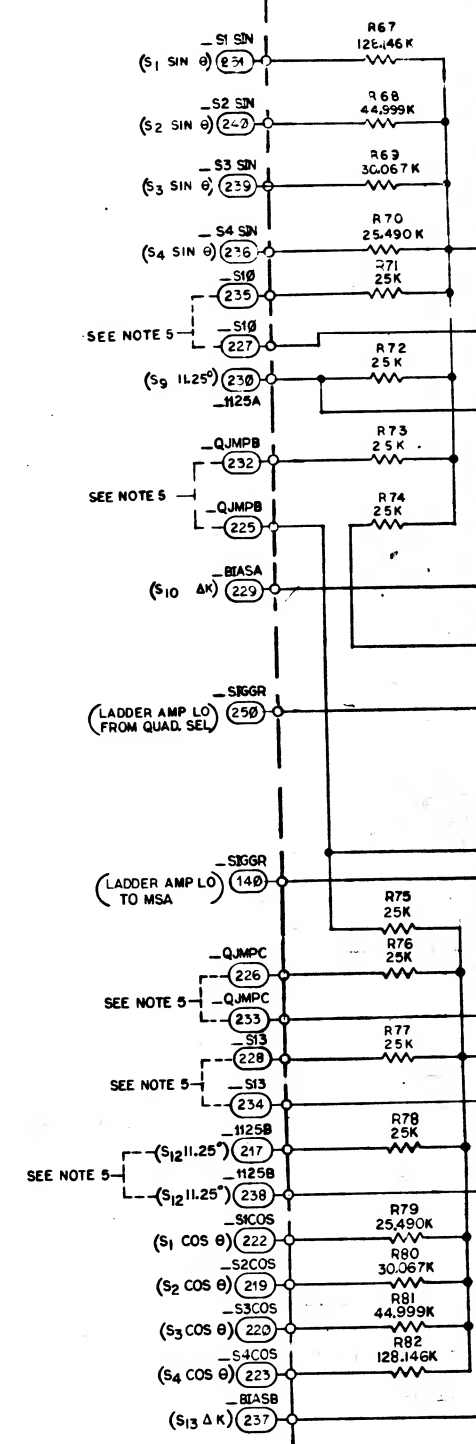
REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
C1	1006755 -14	CAPACITOR	100	±10%	10 VDC
C2	-4		100		10 VDC
C3	-79		6.8		35VDC
C4	-79		6.8		35VDC
C5	-79		6.8		35VDC
C6	-79		6.8		35VDC
C7	-79		6.8		35VDC
C8	-79		6.8		35VDC
C9	-14		100		10 VDC
C10	-14		100		10 VDC
C11	-79		6.8		35VDC
C12	-79		6.8		35VDC
C13	-79		6.8		35VDC
C14	-79		6.8		35VDC
C15	-79		6.8		35VDC
C16	-79		6.8		35VDC
C17	-14		100		10 VDC
C18	-14		100		10 VDC
C19	-79		6.8		35VDC
C20	-79		6.8		35VDC
C21	-79		6.8		35VDC
C22	-79		6.8		35VDC
C23	-79		6.8		35VDC
C24	-79		6.8		35VDC
CR1	1010385	DIODE	IN660		
CR2	-				
CR3	-				
CR4	-				
CR5	-				
CR6	-				
CR7	-				
CR8	-				
CR9	-				
CR10	-				
CR11	-				
CR12	-				
CR13	-				
CR14	-				
CR15	-				
CR16	-				
CR17	-				
CR18	-				
Q1	1010343 -3	TRANSISTOR			
Q2	-				
Q3	-				
Q4	-				
Q5	-				
Q6	-				
Q7	-				
Q8	-				
Q9	-				
Q10	-				
Q11	-				
Q12	-				
Q13	-				
Q14	-				
Q15	-				
Q16	-				
Q17	-				
Q18	-				
Q19	-				
Q20	-				
Q21	-				
Q22	-				
Q23	-				
Q24	-				
Q25	-				
Q26	-				
Q27	-				
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Q29	-				
Q30	-				
Q31	-				
Q32	-				
Q33	-				
Q34	-				
Q35	-				
Q36	-				
A1	2007144	AMPLIFIER	SEE NOTE 4		
A2	-				
A3	-				
A4	-				
A5	-				
A6	-				

MASTER

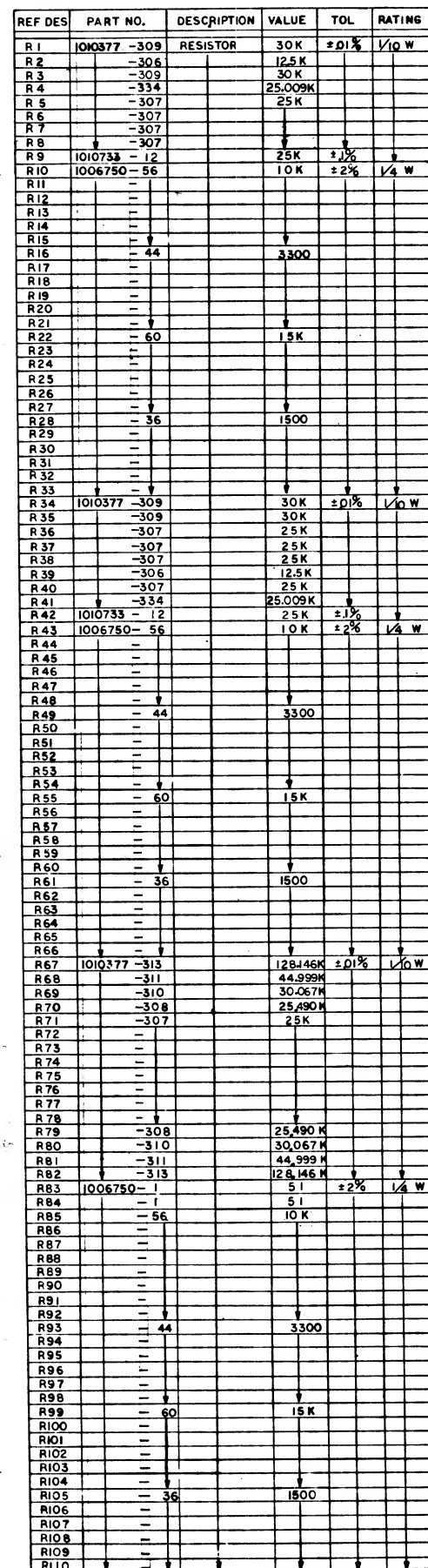
THIS DRAWING IS THE PROPERTY OF THE UNITED STATES GOVERNMENT AND IS LOANED TO YOUR ORGANIZATION. IT AND ITS CONTENTS ARE NOT TO BE DISTRIBUTED OUTSIDE YOUR ORGANIZATION. IT IS TO BE RETURNED TO THE SOURCE FROM WHICH IT WAS LOANED. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM THE UNITED STATES GOVERNMENT.



- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-STD-70327
 2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
 3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
 4. SEE DRAWING NO. 2010C19 FOR SCHEMATIC
 5. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (263) & (252) TO (255); (235) TO (227); (232) TO (225); (226) TO (233); (228) TO (234); (217) TO (238)

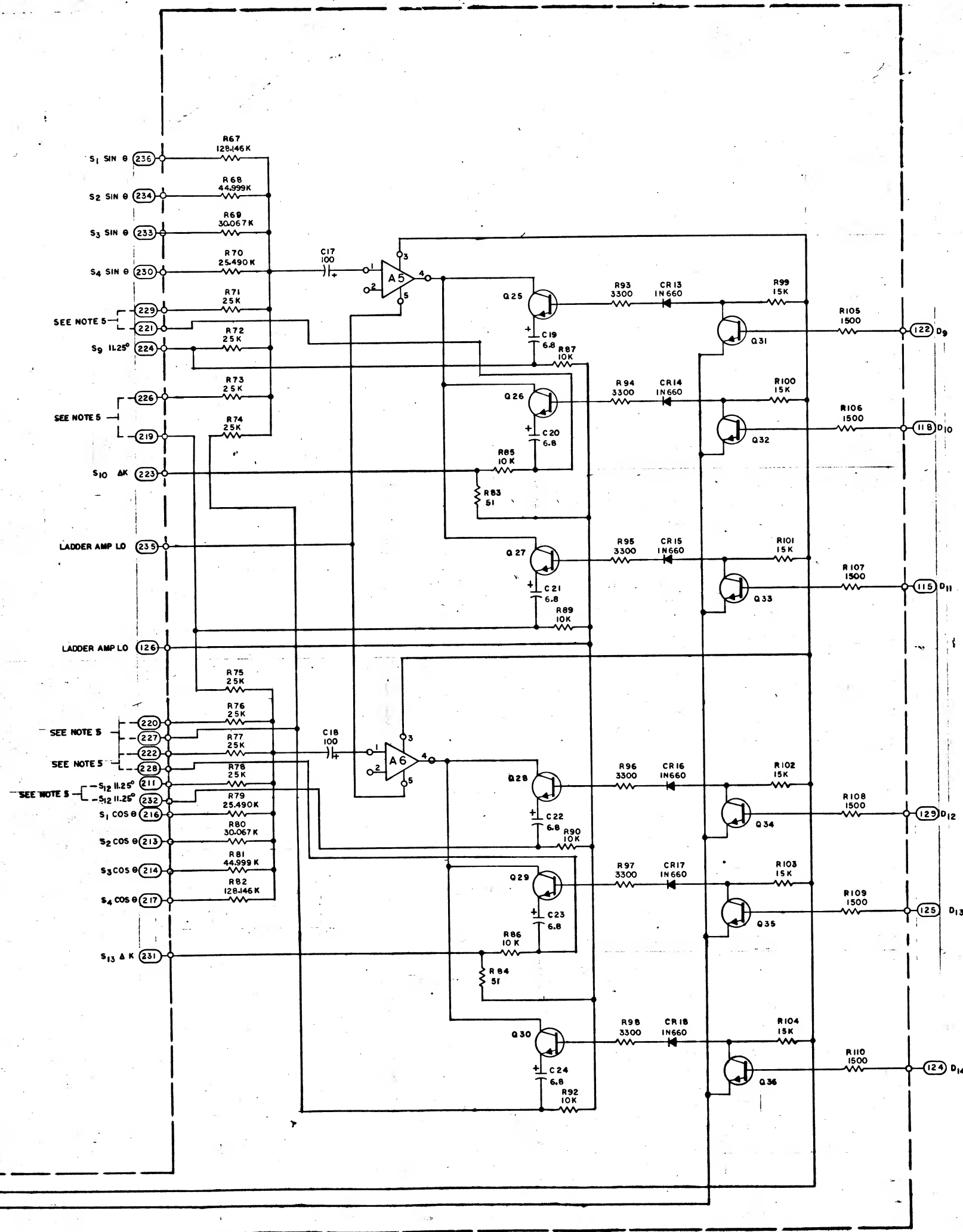


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REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
C1	1006755 -14	CAPACITOR	100	±10%	10 VDC
C2	-14		100		10 VDC
C3	-79		6.8		35VDC
C4	-79		6.8		35VDC
C5	-79		6.8		35VDC
C6	-79		6.8		35VDC
C7	-79		6.8		35VDC
C8	-79		6.8		35VDC
C9	-14		100		10 VDC
C10	-14		100		10 VDC
C11	-79		6.8		35VDC
C12	-79		6.8		35VDC
C13	-79		6.8		35VDC
C14	-79		6.8		35VDC
C15	-79		6.8		35VDC
C16	-79		6.8		35VDC
C17	-14		100		10 VDC
C18	-14		100		10 VDC
C19	-79		6.8		35VDC
C20	-79		6.8		35VDC
C21	-79		6.8		35VDC
C22	-79		6.8		35VDC
C23	-79		6.8		35VDC
C24	-79		6.8		35VDC
CR1	1010385	DIODE	IN660		
CR2					
CR3					
CR4					
CR5					
CR6					
CR7					
CR8					
CR9					
CR10					
CR11					
CR12					
CR13					
CR14					
CR15					
CR16					
CR17					
CR18					
Q1	1010343 -3	TRANSISTOR			
Q2					
Q3					
Q4					
Q5					
Q6					
Q7					
Q8					
Q9					
Q10					
Q11					
Q12					
Q13					
Q14					
Q15					
Q16					
Q17					
Q18					
Q19					
Q20					
Q21					
Q22					
Q23					
Q24					
Q25					
Q26					
Q27					
Q28					
Q29					
Q30					
Q31					
Q32					
Q33					
Q34					
Q35					
Q36					
A1	2010201	AMPLIFIER	SEE NOTE 4		
A2					
A3					
A4					
A5					
A6					

CITY REQD		PART OR IDENTIFYING NO.		FORMULATURE OR DESCRIPTION	
		CITY		LIST OF MATERIALS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		SUBSTITUTIONAL EQUIVALENT		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
TOLERANCES ON		FRACTIONS DECIMALS ANGLES		SCHEMATIC QUADRANT SELECTOR	
DO NOT SCALE THIS DRAWING		DRAWN <u>22/2/66</u> DATE <u>2/2/66</u>			
MATERIAL		CHECKED <u>22/2/66</u>		NADA DRAWING NO. 2010059	
NEXT TREATMENT		APPROVAL <u>22/2/66</u>			
NEXT ABBY USED ON		NADA APPROVAL <u>22/2/66</u>		CODE IDENT NO. <u>J</u>	
APPLICATION		MT APPROVAL <u>22/2/66</u>		SCALE _____ WT _____ SWEET 1 _____	

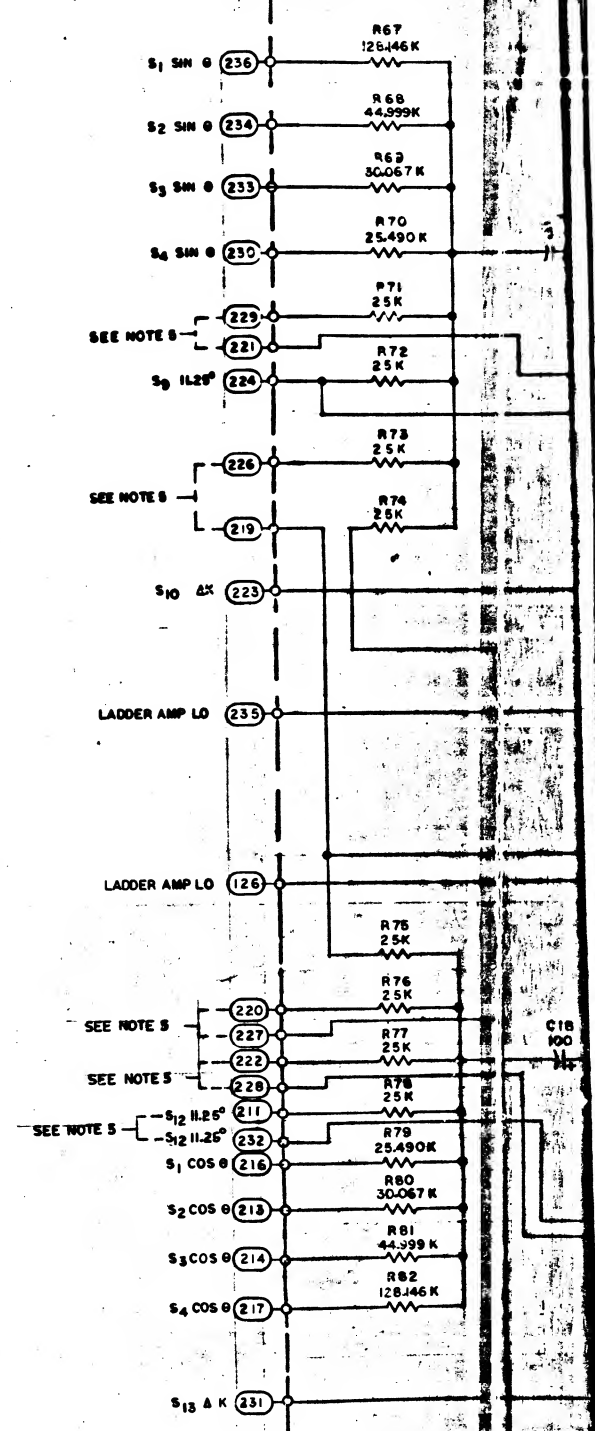
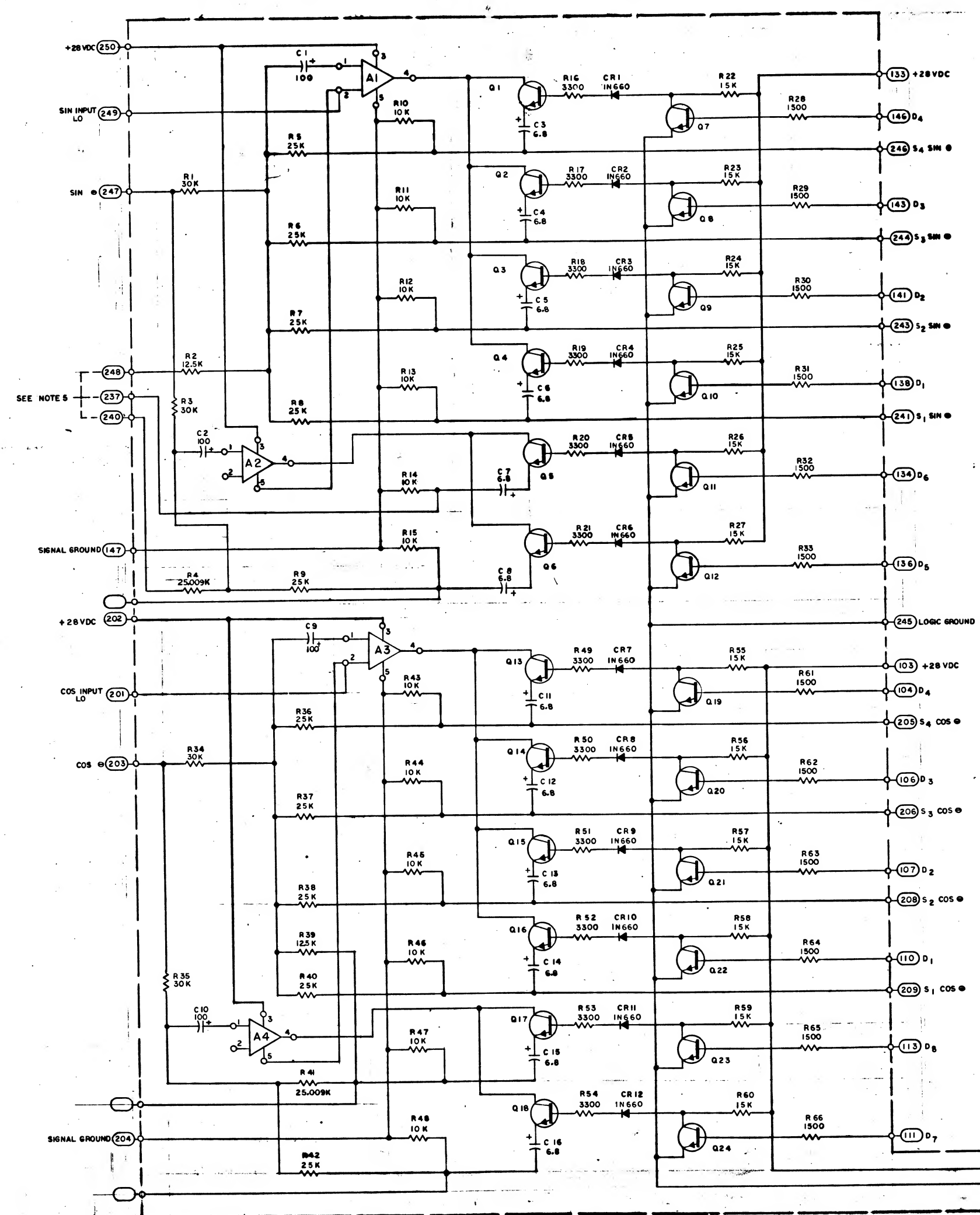


REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	100377-309	RESISTOR	30K	±0.1%	1/10 W
R2	-306		12.5K		
R3	-309		30K		
R4	-334		25.009K		
R5	-307		25K		
R6	-307				
R7	-307				
R8	-307				
R9	1010733-12		25K	±1%	
R10	1006750-56		10K	±2%	1/4 W
R11	-				
R12	-				
R13	-				
R14	-				
R15	-				
R16	-44		3300		
R17	-				
R18	-				
R19	-				
R20	-				
R21	-				
R22	-60		15K		
R23	-				
R24	-				
R25	-				
R26	-				
R27	-				
R28	-36		1500		
R29	-				
R30	-				
R31	-				
R32	-				
R33	1010377-309		30K	±0.1%	1/10 W
R34	-309		30K		
R35	-307		25K		
R36	-307		25K		
R37	-306		12.5K		
R38	-307		25K		
R39	-334		25.009K		
R40	-				
R41	-				
R42	1010733-12		25K	±1%	
R43	1006750-56		10K	±2%	1/4 W
R44	-				
R45	-				
R46	-				
R47	-				
R48	-				
R49	-44		3300		
R50	-				
R51	-				
R52	-				
R53	-				
R54	-				
R55	-60		15K		
R56	-				
R57	-				
R58	-				
R59	-				
R60	-				
R61	-36		1500		
R62	-				
R63	-				
R64	-				
R65	-				
R66	-				
R67	1010377-313		128.146K	±0.1%	1/10 W
R68	-311		44.999K		
R69	-310		30.067K		
R70	-308		25.490K		
R71	-307		25K		
R72	-				
R73	-				
R74	-				
R75	-				
R76	-				
R77	-				
R78	-				
R79	-308		25.490K		
R80	-310		30.067K		
R81	-311		44.999K		
R82	-313		128.146K	±0.1%	1/10 W
R83	1006750-56		10K	±2%	1/4 W
R84	-				
R85	-56		10K		
R86	-				
R87	-				
R88	-				
R89	-				
R90	-				
R91	-				
R92	-44		3300		
R93	-				
R94	-				
R95	-				
R96	-				
R97	-				
R98	-				
R99	-60		15K		
R100	-				
R101	-				
R102	-				
R103	-				
R104	-36		1500		
R105	-				
R106	-				
R107	-				
R108	-				
R109	-				
R110	-				

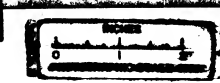
REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
C1	1006755-14	CAPACITOR	100	±1%	50VDC
C2	-4		100		
C3	-79		6.8		
C4	-79		6.8		
C5	-79		6.8		
C6	-79		6.8		
C7	-79		6.8		
C8	-79		6.8		
C9	-14		50		
C10	-14		100		
C11	-79		6.8		
C12	-79		6.8		
C13	-79		6.8		
C14	-79		6.8		
C15	-79		6.8		
C16	-79		6.8		
C17	-14		100		
C18	-14		100		
C19	-79		6.8		
C20	-79		6.8		
C21	-79		6.8		
C22	-79		6.8		
C23	-79		6.8		
C24	-79		6.8		
CR1	1010385	DIODE	IN660		
CR2	-				
CR3	-				
CR4	-				
CR5	-				
CR6	-				
CR7	-				
CR8	-				
CR9	-				
CR10	-				
CR11	-				
CR12	-				
CR13	-				
CR14	-				
CR15	-				
CR16	-				
CR17	-				
CR18	-				
Q1	1010343-3	TRANSISTOR			
Q2	-				
Q3	-				
Q4	-				
Q5	-				
Q6	-				
Q7	-				
Q8	-				
Q9	-				
Q10	-				
Q11	-				
Q12	-				
Q13	-				
Q14	-				
Q15	-				
Q16	-				
Q17	-				
Q18	-				
Q19	-				
Q20	-				
Q21	-				
Q22	-				
Q23	-				
Q24	-				
Q25	-				
Q26	-				
Q27	-				
Q28	-				
Q29	-				
Q30	-				
Q31	-				
Q32	-				
Q33	-				
Q34	-				
Q35	-				
Q36	-				
A1	2010201	AMPLIFIER	SEE NOTE 4		
A2	-				
A3	-				
A4	-				
A5	-				
A6	-				

MASTER

2010 59



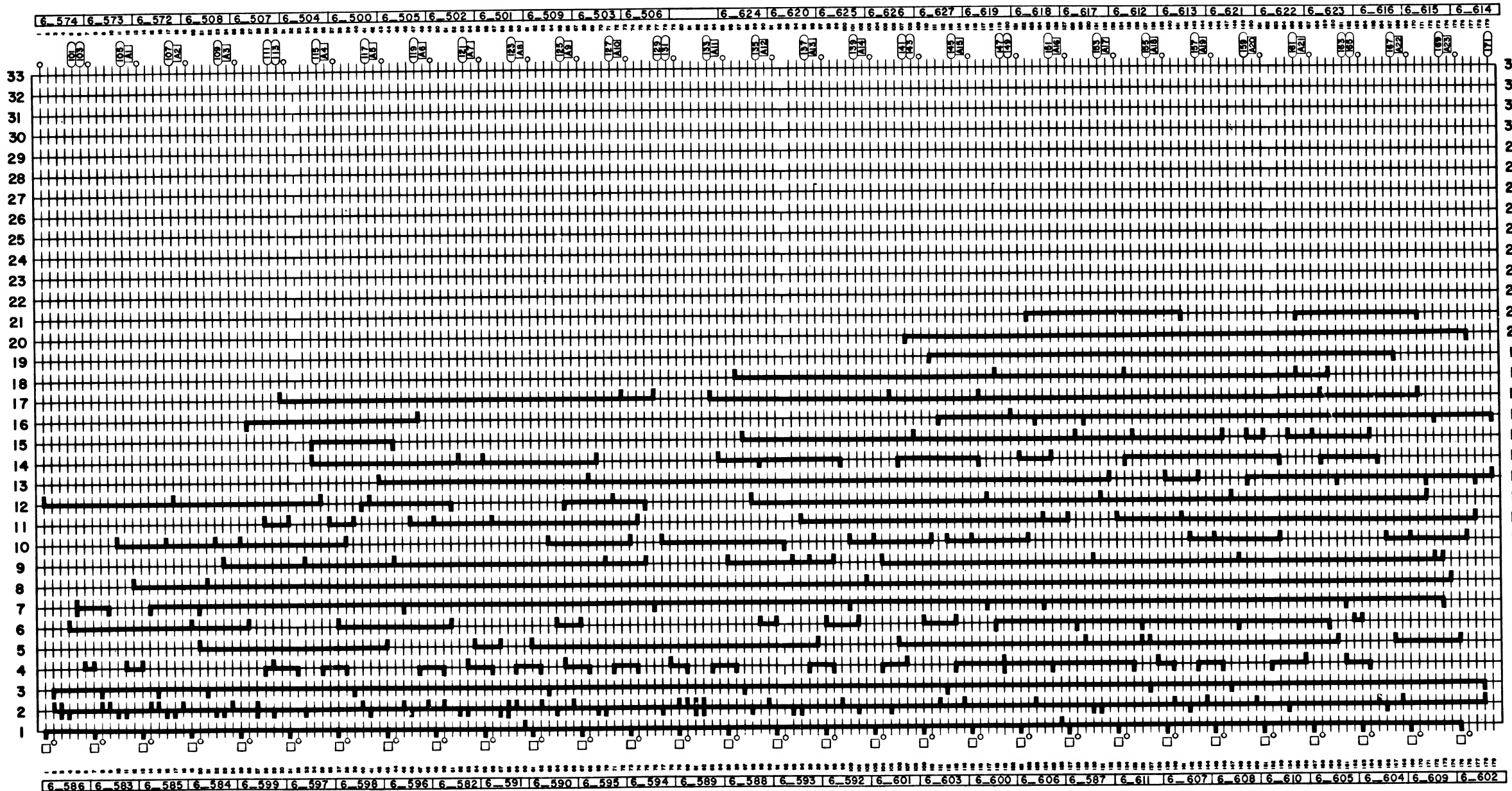
- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS
 3. UNLESS OTHERWISE SPECIFIED CAPACITOR VALUES ARE IN MICROFARADS
 4. SEE DRAWING NO. 201009 FOR SCHEMATIC
 5. FOR OPERATION OF THIS CIRCUIT CONNECT IN THE WIRING TRAY THE TERMINALS INDICATED: (248) & (237) TO (240); (229) TO (221); (226) TO (219); (220) TO (227); (222) TO (228); (211) TO (232)



F-1

2010 59

REVISED PER TORR		NO	CHK	DATE	APPROVED
A					



- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70527
 2. ☐ DENOTES PIN ID OF DUAL NOR GATES
 3. ☐ DENOTES OUTPUTS (PINS 1 & 9) OF DUAL NOR GATES
 4. ☐ DENOTES INTER-QUADRANT CONNECTION WITHIN MODULE
 5. ☐ DENOTES MODULE PIN NUMBERS
 6. ☐ DENOTES NOR GATE NUMBER
 7. ☐ REPRESENTS CONNECTION TO OVDC SIGNAL
 8. ☐ REPRESENTS CONNECTION TO POWER

QUADRANT NO. 1

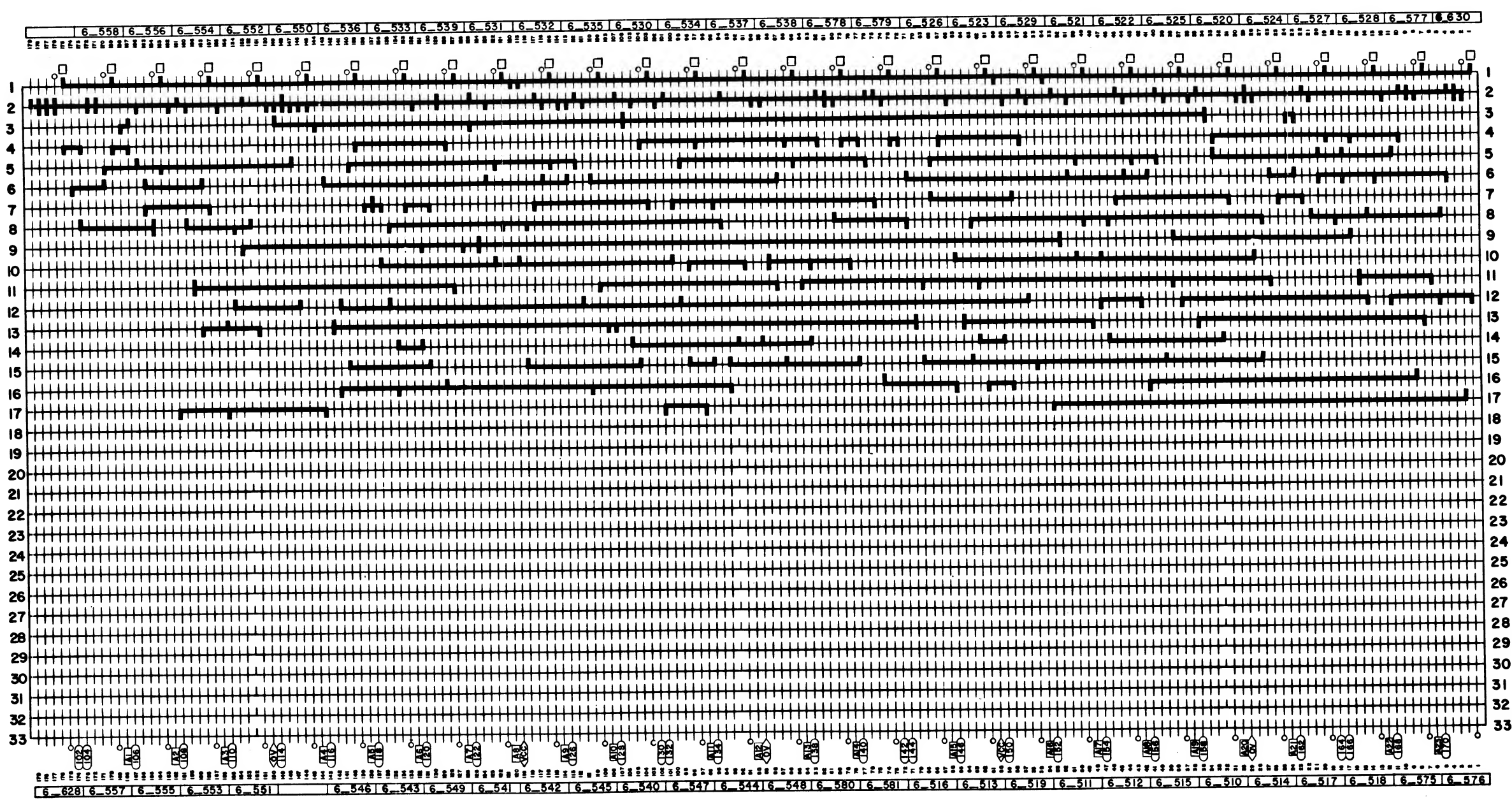
MASTER

REF DWG: SCHEMATIC 2010060-00

QTY 7500	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	PRD NO.
MIT INSTRUMENTATION LAB CAMBRIDGE MASS		LIST OF MATERIALS MANNED SPACECRAFT CENTER HOUSTON TEXAS		
DRAWN <i>[Signature]</i> CHECKED <i>[Signature]</i> APPROVED <i>[Signature]</i> DATE <i>[Date]</i>		SIGNAL WIRING DIAGRAM READ COUNTER		
APPROVED <i>[Signature]</i> DATE <i>[Date]</i>		DRAWING NO. 2010060		
NEXT ASSY USED ON APPLICATION		SCALE 1"=2"		

2010060 A

REVISIONS				
NO.	DATE	DESCRIPTION	BY	CHK
1	10/1/60	REVISED PER TORR	WJ	WJ



QUADRANT NO. 2

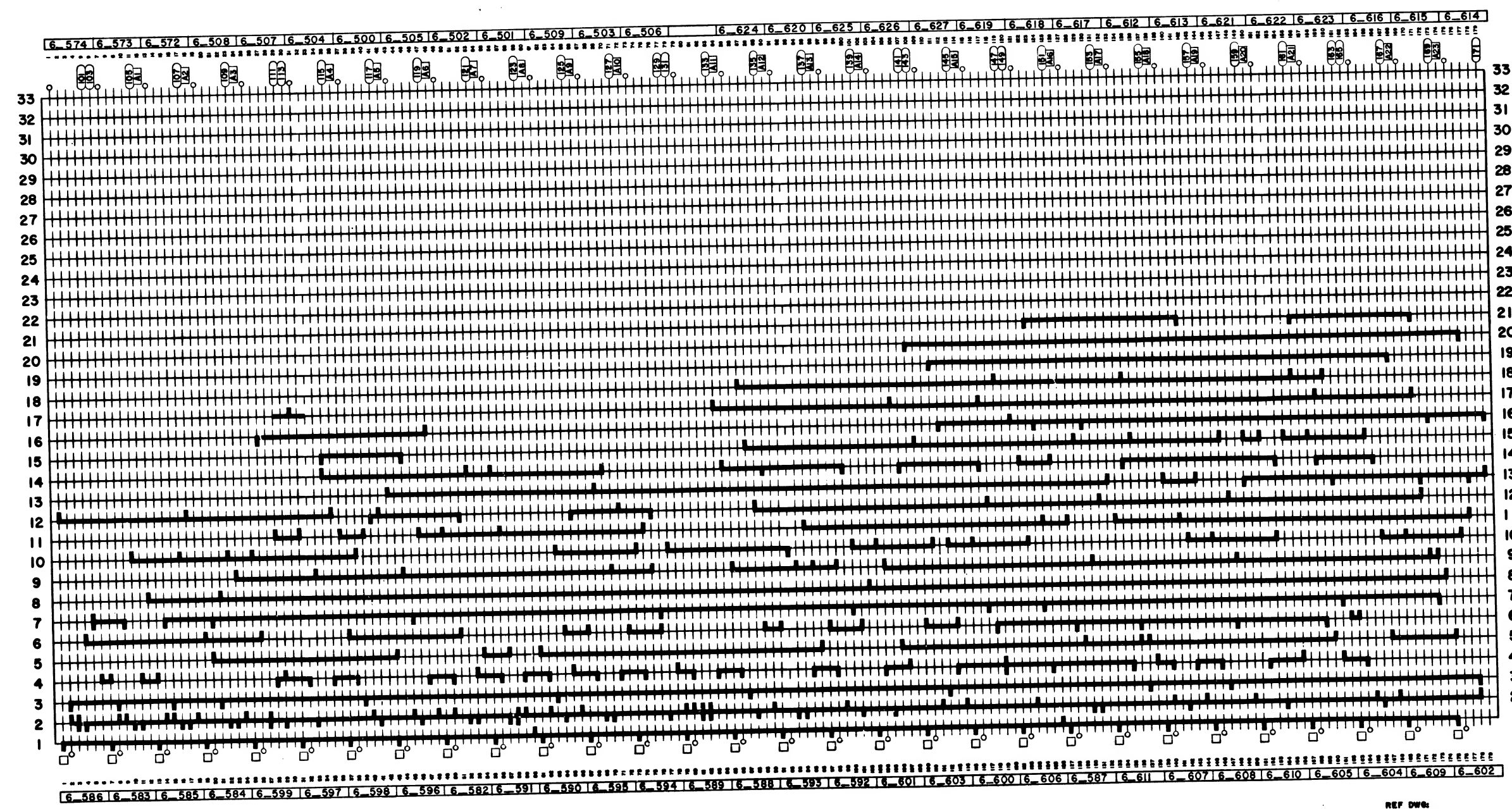
QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	PROJ NO.										
<table border="1"> <tr> <td colspan="2">MIT INSTRUMENTATION LAB CLARKSON, MASS</td> <td colspan="3">LIST OF MATERIALS MANNED SPACECRAFT CENTER HOUSTON, TEXAS</td> </tr> <tr> <td colspan="2"> DESIGNED BY: <i>WJ</i> CHECKED BY: <i>WJ</i> APPROVED BY: <i>WJ</i> DATE: <i>10/1/60</i> </td> <td colspan="3"> SIGNAL WIRING DIAGRAM READ COUNTER DRAWING NO. 2010060 CODE IDENT NO. E DATE: <i>10/1/60</i> </td> </tr> </table>					MIT INSTRUMENTATION LAB CLARKSON, MASS		LIST OF MATERIALS MANNED SPACECRAFT CENTER HOUSTON, TEXAS			DESIGNED BY: <i>WJ</i> CHECKED BY: <i>WJ</i> APPROVED BY: <i>WJ</i> DATE: <i>10/1/60</i>		SIGNAL WIRING DIAGRAM READ COUNTER DRAWING NO. 2010060 CODE IDENT NO. E DATE: <i>10/1/60</i>		
MIT INSTRUMENTATION LAB CLARKSON, MASS		LIST OF MATERIALS MANNED SPACECRAFT CENTER HOUSTON, TEXAS												
DESIGNED BY: <i>WJ</i> CHECKED BY: <i>WJ</i> APPROVED BY: <i>WJ</i> DATE: <i>10/1/60</i>		SIGNAL WIRING DIAGRAM READ COUNTER DRAWING NO. 2010060 CODE IDENT NO. E DATE: <i>10/1/60</i>												
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES * * * * * DO NOT SCALE THIS DRAWING MATERIAL NEXT ASSY USED ON APPLICATION														

2010060 A

QTY	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FOR NO.
LIST OF MATERIALS				
MATERIALS			MANIPUL SPACECRAFT CENTER HOUSTON, TEXAS	
INSTRUMENTATION LAB CAMBRIDGE, MASS.			SIGNAL WIRING DIAGRAM	
QUANTITY	DATE	DATE		
CHECKED	APPROVED	DATE		
APPROVED	DATE	DATE		
MATERIAL			READ COUNTER	
APPROVED	DATE	DATE	CORE IDENT NO.	SIZE
APPROVED	DATE	DATE	ISSUING NO.	
NEXT ASSY			2010060	
USED ON			SCALE	
APPLICATION			SHEET 3 OF 4	

[illegible]

QTY REQD		PART OR IDENTIFYING NO.		MATERIAL OR NOTES		NOMENCLATURE OR DESCRIPTION		FIN NO	
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μF RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES IS DO NOT SCALE THIS DRAWING</p> <p>MATERIAL _____</p> <p>NEXT ASBY _____ USED ON _____</p> <p>APPLICATION _____</p> </div> <div style="width: 55%;"> <p style="text-align: center;">M I T INSTRUMENTATION CAMBRIDGE, MASS.</p> <p>MANUFACTURED BY SPACECRAFT CENTER NEWBURGH, TEXAS</p> <p style="text-align: center; font-size: 2em; font-weight: bold;">SIGNAL WIRING DIAGRAM</p> <p style="text-align: center; font-size: 1.5em; font-weight: bold;">READ COUNTER</p> <p style="text-align: center;">DRAWING NO. _____</p> <p style="text-align: center;">CORE IDENT. NO. _____</p> <p style="text-align: center;">SIZE E</p> <p style="text-align: center;">DRAWING NO. 2010060</p> <p style="text-align: center;">APPROVED BY <i>[Signature]</i> DATE <i>11/1/61</i></p> <p style="text-align: center;">APPROVED BY <i>[Signature]</i> DATE <i>11/1/61</i></p> <p style="text-align: center;">SEC. _____ SCALE _____</p> <p style="text-align: right;">1-587 4 3 4</p> </div> </div>									



- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. ☐ DENOTES PIN ID OF DUAL NOR GATES
 3. ☐ DENOTES OUTPUTS (PINS 1 & 9) OF DUAL NOR GATES
 4. ☐ DENOTES INTER-QUADRANT CONNECTION WITHIN MODULE
 5. ☐ DENOTES MODULE PIN NUMBERS
 6. ☐ DENOTES NOR GATE NUMBER
 7. ☐ REPRESENTS CONNECTION TO OVDC SIGNAL
 8. ☐ REPRESENTS CONNECTION TO POWER

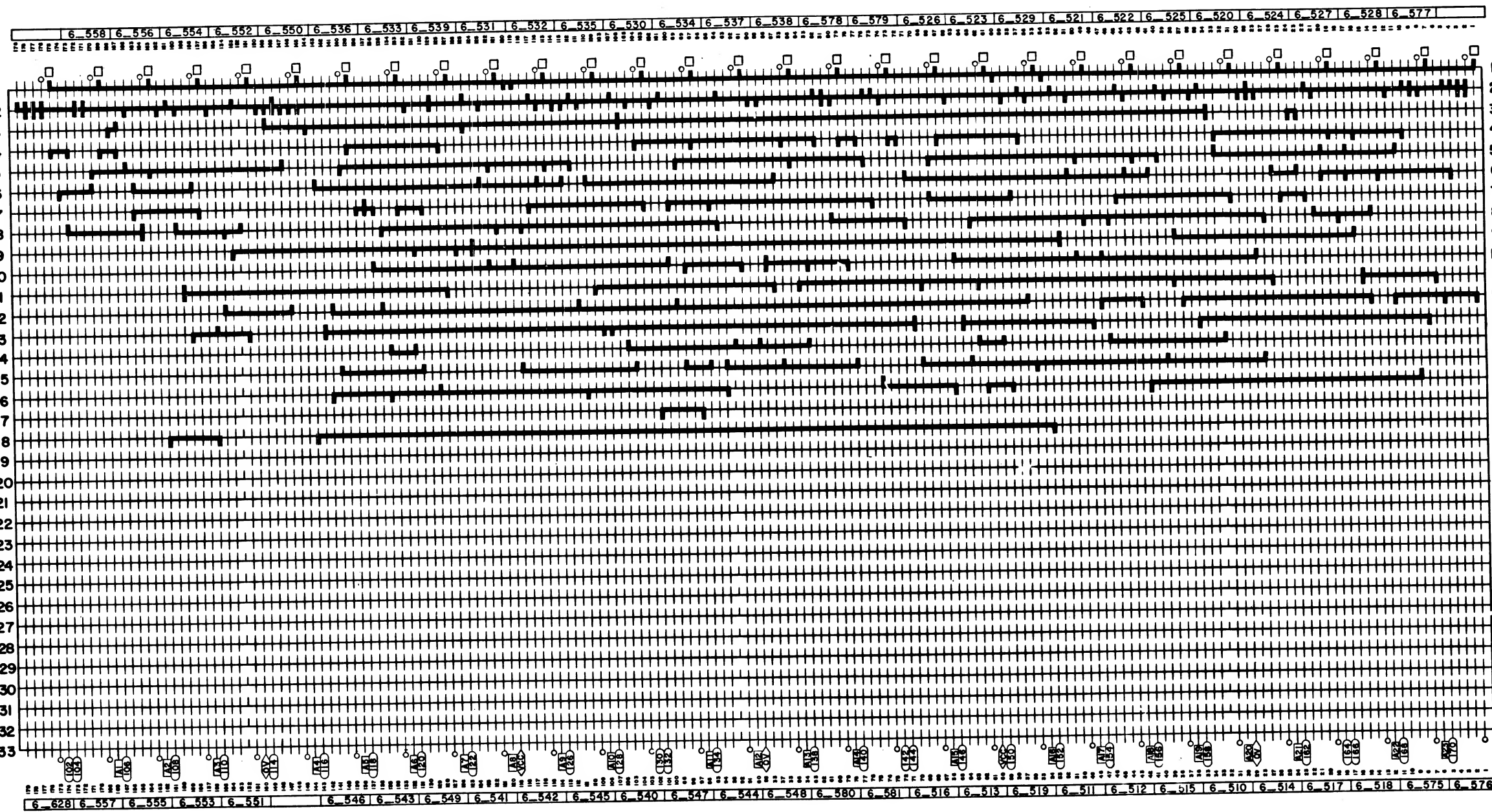
QUADRANT #1

REF DWS:
SCHEMATIC 2010040

QTY	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	PROD NO.
			MIT INSTRUMENTATION LAB CAMBRIDGE, MASS	
			LIST OF MATERIALS MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
			SIGNAL WIRING DIAGRAM	
			READ COUNTER	
			ISSUING NO. 2010060	
			DATE	

REVISIONS

REV	DATE	APPROVED
1	10/1/60	

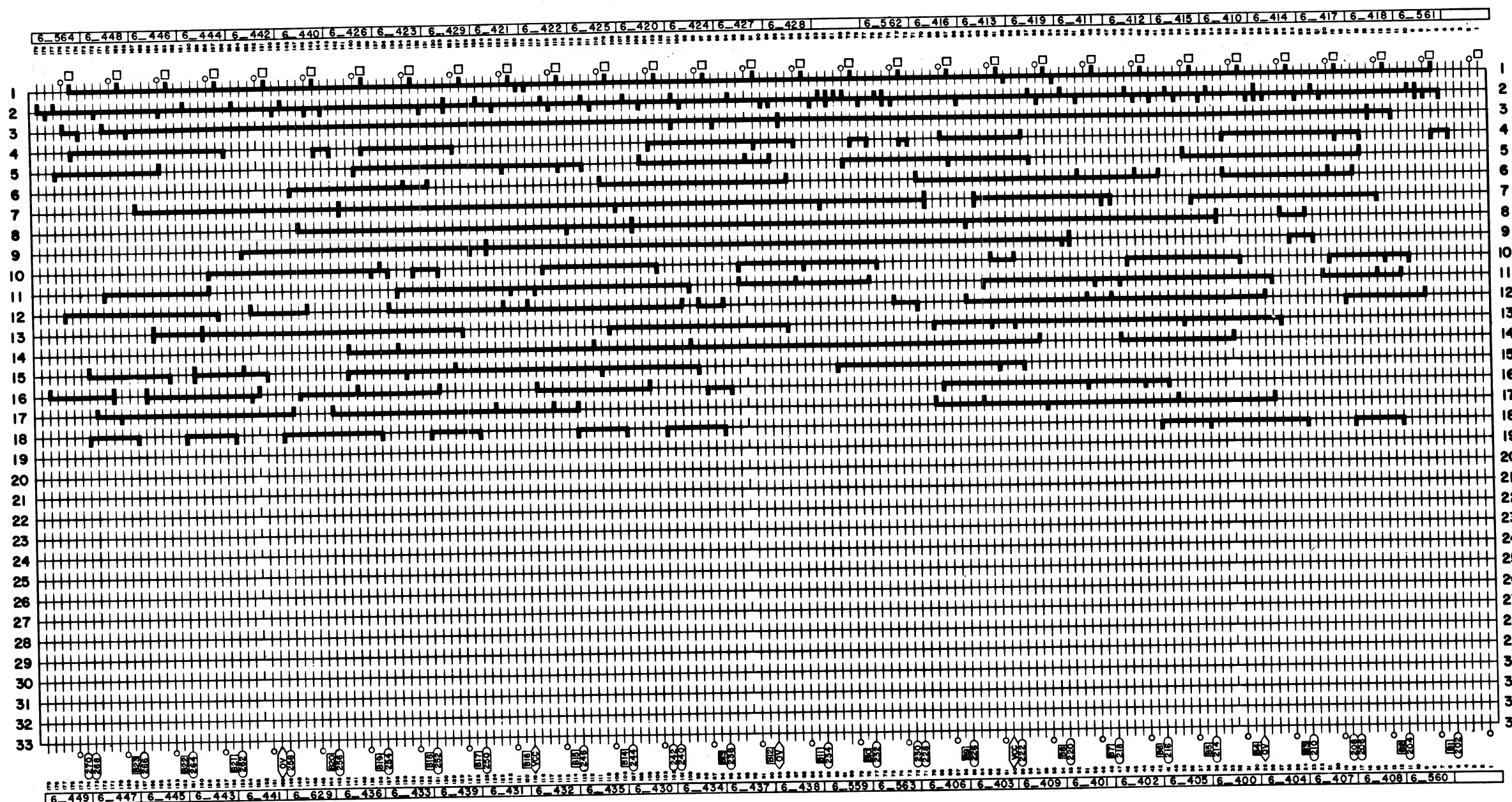


LEFT
RIGHT

CITY		PART OR IDENTIFYING NO.		MATERIAL OR NOTES		NOMENCLATURE OR DESCRIPTION		FORM NO.	
MIT		INSTRUMENTATION LAB		CAMBRIDGE, MASS.		LIST OF MATERIALS		MANNED SPACECRAFT CENTER	
DRAWN		CHECKED		APPROVED		DATE		HOUSTON, TEXAS	
SIGNAL WIRING DIAGRAM		READ COUNTER		DRAWING NO.		2010060		SHEET 2 OF 4	
NEXT ASSY		USED ON		APPLICATION		DATE		SCALE	

REVISIONS

REV	DATE	DESCRIPTION	BY	CHK	DATE	APPROVED
1	10/1/60					

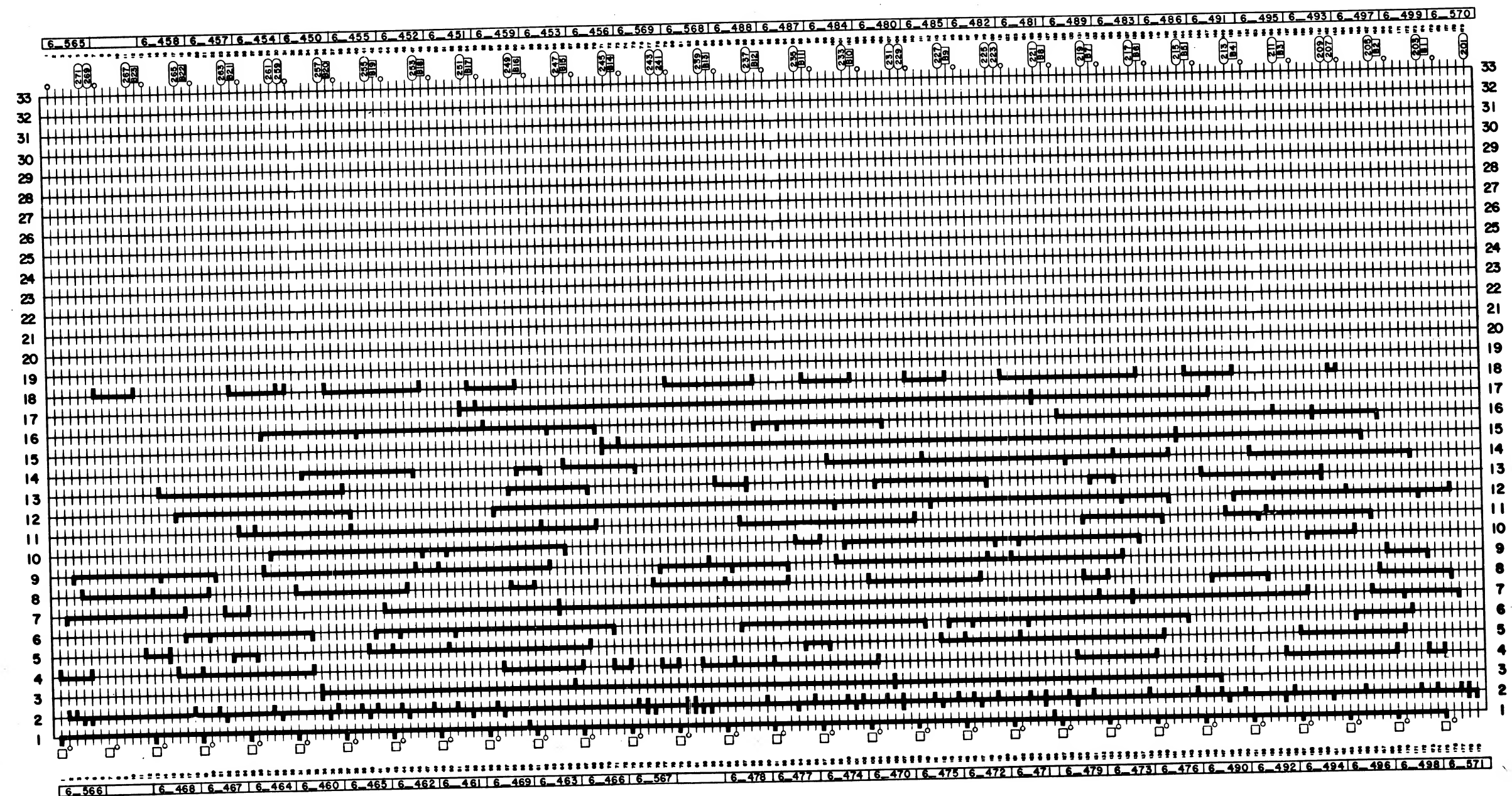


QUADRANT #3

MASTER

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIG NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN: <i>[Signature]</i> CHECKED: <i>[Signature]</i> APPROVED: <i>[Signature]</i> DATE: <i>[Date]</i>		SIGNAL WIRING DIAGRAM		
NEXT ASBY		READ COUNTER		
USED ON		DRAWING NO. 2010060		
APPLICATION		SHEET 3 OF 4		

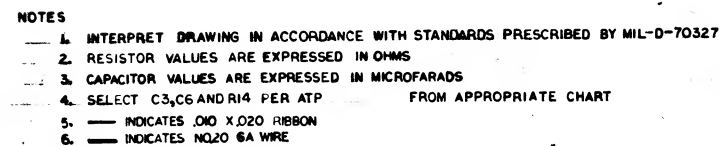
REVISIONS				
NO.	DATE	BY	CHK	APPROVED
1	10/6/67			



QUADRANT #4

MASTER

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	DESCRIPTION OR REFERENCE	FIG NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
SIGNAL WIRING DIAGRAM				
READ COUNTER				
APPROVED BY DATE		CORE IDENT NO.	SIZE	DESIGNING NO.
APPROVED BY DATE		E		2010060
APPLICATION		SCALE	SHEET 4 OF 4	



MASTER

QTY REQD		PART OR IDENTIFYING NO.		MATERIAL OR NOTES		NOMENCLATURE OR DESCRIPTION		FIN NO	
						LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.						MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
DRAWN <i>W. J. [Signature]</i> <i>1/28/62</i> CHECKED <i>W. J. [Signature]</i> <i>1/28/62</i> APPROVED <i>W. J. [Signature]</i> <i>1/28/62</i> APPROVED _____ MATERIAL						SCHEMATIC POWER SUPPLY CDU ELECTRONICS			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ± ± ± DO NOT SCALE THIS DRAWING						DRAWING NO. _____ CODE IDENT NO. _____ SIZE _____ E			
NEXT ASSY _____ USED ON _____ APPLICATION _____						2010062 DATE _____ SCALE NONE SHEET 1 of 2			

REF DES	PART NO	DESIGNATION	VALUE	TOL	RATING
R1	1006750-37	RESISTOR	1600	±2%	1/4W
R2	1006750-56		10K	±2%	1/4W
R3	1006750-43		3000	±2%	1/4W
R4	1006750-56		10K	±2%	1/4W
R5	1006750-70		39K	±2%	1/4W
R6	1010364-443		10K	±1%	1/8W
R7	1010364-443		10K	±1%	1/8W
R8	1006750-70		39K	±2%	1/4W
R9	1010363-613		76.8K	±1%	1/4W
R10	1010363-613		76.8K	±1%	1/4W
R11	1006750-56		10K	±2%	1/4W
R12	1006750-56		10K	±2%	1/4W
R13	1006760-52		6800	±2%	1/2W
R14	1010364		NOM	±1%	1/8W
R15	1010364-367		4020	±1%	1/8W
R16	1006750-11		51	±2%	1/4W
R17	1010364-327		2490	±1%	1/8W
R18	1006750-19		300	±2%	1/4W
R19	1006750-19		300	±2%	1/4W
R20	1006750-36		1500	±2%	1/4W
R21	1006750-39		2000	±2%	1/4W
R22	1010369-148		20	±5%	1/8W
R23	1010369-148		20	±5%	1/8W
R24	1006750-49		500	±2%	1/4W
R25	1006750-32		1000	±2%	1/4W
R26	1006750-15		200	±2%	1/4W
R27	1010364-443	RESISTOR	10K	±1%	1/8W
C1	1010410-6	CAPACITOR	360UUF	±2%	500VDC
C2	1010410-6		360UUF	±2%	500VDC
C3	1010409		NOM		500VDC
C4	1010410-20		430UUF	±1%	500VDC
C5	1010410-20		430UUF	±1%	500VDC
C6	1010409		NOM		500VDC
C7	1006755-26		1.2	±10%	20VDC
C8	1006777-30		.0068	±10%	100VDC
C9	1006777-30		.0068	±10%	100VDC
C10	1010410-10		510UUF	±2%	500VDC
C11	1010410-10		510UUF	±2%	500VDC
C12	1006755-31		10	±10%	20VDC
C13	1010393-045		22	±10%	50VDC
C14	1006755-21		22	±10%	15VDC
C15	1006755-21		22	±10%	15VDC
C16	1006755-21		22	±10%	15VDC
C17	1006789-002	CAPACITOR	47	±10%	50VDC
CR1	1010372-22	DIODE	HZ8551		
CR2	1010385		IN660		
CR3	1010385		IN660		
CR4	1010385		IN660		
CR5	1010385		IN660		
CR6	1006838		IN3891		
CR7	1010777-2		IN3891		
CR8	1010777-2		IN3891		
CR9	1010777-1		IN3881		
CR10	1010777-1	DIODE	IN3881		
Q1	1006752	TRANSISTOR	2N914		
Q2	1010652-4				
Q3	1010652-4				
Q4	1010343-2		2N2364A		
Q5	1010343-2		2N2364A		
Q6	1010843-2		2N2880		MATCHED PAIR
Q7	1010843-2		2N2880		
Q8	1010345-1		2N2303		
Q9	1010269-1	TRANSISTOR	2N2151		
T1	1006319	TRANSFORMER			
T2	1010355-2	TRANSFORMER	DO-T30		
T3	1010927	TRANSFORMER			
L1	1010926	INDUCTOR			

C3, C6

PART NO	VALUE	TOL	RATING
1010409-1	10UUF	±25UUF	500VDC
-2	11UUF	±25UUF	
-3	12UUF	±25UUF	
-4	13UUF	±25UUF	
-5	15UUF	±25UUF	
-6	16UUF	±25UUF	
-7	18UUF	±25UUF	
-8	20UUF	±25UUF	
-9	22UUF	±25UUF	
-10	24UUF	±25UUF	
-11	27UUF	±25UUF	
1010409-12	30UUF	±25UUF	

R14

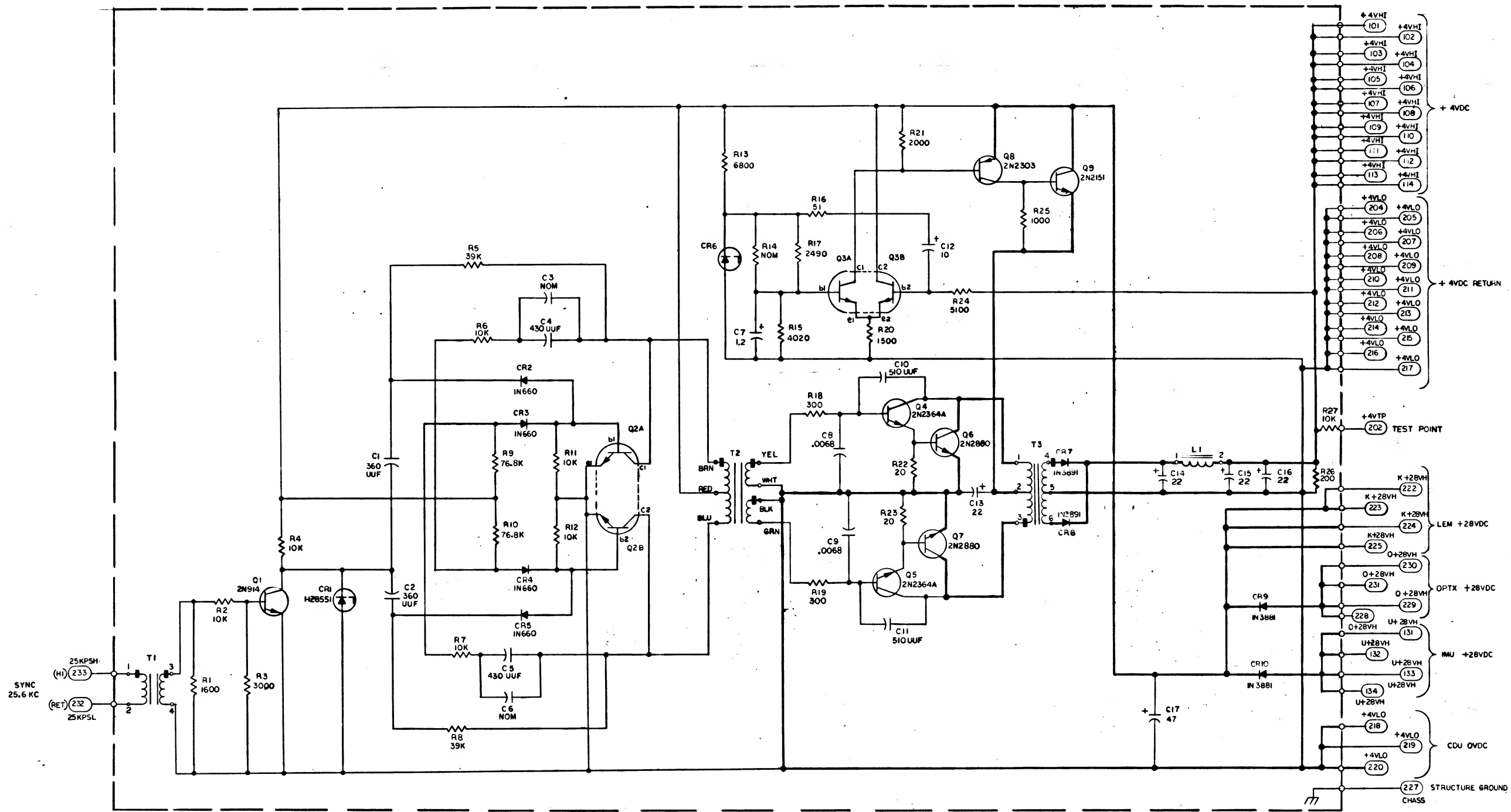
PART NO	VALUE
1010364-559	40.2K
-551	36.5K
-543	33.2K
-535	30.1K
-525	26.7K
-517	24.3K
-509	22.1K
-501	20K
-493	18.2K
-485	16.2K
-475	14.7K
-467	13.3K
-459	12.1K
1010364-451	11K

MASTER

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	REV NO.
<div> <div> <p>MIT INSTRUMENTATION LAB CAMBRIDGE, MASS</p> <p>DRAWN: <i>Carla L. Long</i> 12/16/99 CHECKED: <i>John H. Long</i> 12/16/99 APPROVED: <i>John H. Long</i> 12/16/99</p> </div> <div> <p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μF RESISTOR VALUES ARE IN OHMS FRACTIONS DECIMALS ANGLES ± — ± — ± — DO NOT SCALE THIS DRAWING</p> </div> </div>				
<p>LIST OF MATERIALS</p> <p>MANNED SPACECRAFT CENTER HOUSTON, TEXAS</p> <p>SCHEMATIC POWER SUPPLY CDU ELECTRONICS</p>			<p>DRAWING NO. 2010062</p> <p>SHEET 2 OF 2</p>	
<p>APPROVED BY: <i>John H. Long</i> 12/16/99 DATE: 12/16/99</p>		<p>SCALE: NONE</p>		

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. CAPACITOR VALUES ARE IN MICROFARADS. RESISTOR VALUES ARE IN OHMS. TOLERANCES ON FRACTIONS: DECIMALS: ANGLES: DO NOT SCALE THIS DRAWING. MATERIAL: NEXT ASSY: USED ON: APPLICATION:

REVISIONS				
BY	DATE	DESCRIPTION	CHK	APP
A	17/1/67	REVISED PER TDRR 17199	EL	EL
B	17/1/67	REVISED PER TDRR 1967	EL	EL



- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. RESISTOR VALUES ARE EXPRESSED IN OHMS
 3. CAPACITOR VALUES ARE EXPRESSED IN MICROFARADS
 4. SELECT C3, C6 AND R14 PER ATP FROM APPROPRIATE CHART
 5. ——— INDICATES .010 X .020 RIBBON
 6. ——— INDICATES NO.20 GA WIRE

REF DWG
DWG NO. 200742 POWER SUPPLY ASSY
CDU ELECTRONICS

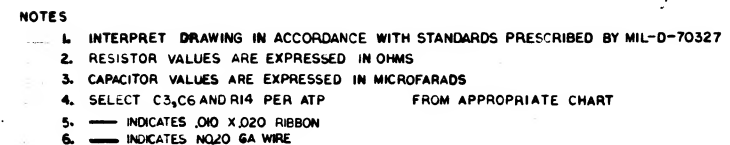
QTY	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS			
MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
SCHEMATIC POWER SUPPLY CDU ELECTRONICS			
DRAWN: [Signature]		CHECKED: [Signature]	
APPROVED: [Signature]		APPROVED: [Signature]	
DATE: 1/17/67		DATE: 1/17/67	
CODE IDENT NO: 80230		DRAWING NO: 2010062	
SCALE: NONE		SHEET 1 OF 2	

REF DES	PART NO	DESIGNATION	VALUE	TOL	RATING
R1	1006750-37	RESISTOR	1600	±2%	1/4W
R2	1006750-38		10K	±2%	1/4W
R3	1006750-43		3000	±2%	1/4W
R4	1006750-56		10K	±2%	1/4W
R5	1006750-70		39K	±2%	1/4W
R6	1010364-443		10 K	±1%	1/8W
R7	1010364-443		10K	±1%	1/8W
R8	1006750-70		39K	±2%	1/4W
R9	1010363-613		76-8K	±1%	1/4W
R10	1010363-613		76-8K	±1%	1/4W
R11	1006750-16		10K	±2%	1/4W
R12	1006750-56		10K	±2%	1/4W
R13	1006760-52		6800	±2%	1/2W
R14	SEE NOTE 4		NOM	±1%	1/8W
R15	1010364-367		4020	±1%	1/8W
R16	1006750-11		51	±2%	1/4W
R17	1010364-327		2490	±1%	1/8W
R18	1006750-49		300	±2%	1/4W
R19	1006750-19		300	±2%	1/4W
R20	1006750-36		1500	±2%	1/4W
R21	1006750-39		2000	±2%	1/4W
R22	1010369-148		20	±5%	1/8W
R23	1010369-148		20	±5%	1/8W
R24	1006750-49		5100	±2%	1/4W
R25	1006750-32		1000	±2%	1/4W
R26	1006750-15		200	±2%	1/4W
R27	1010364-443	RESISTOR	10 K	±1%	1/8W
C1	1010410-6	CAPACITOR	3601UF	±2%	500VDC
C2	1010410-6		3601UF	±2%	500VDC
C3	SEE NOTE 4		NOM		500VDC
C4	1010410-20		4300UF	±1%	500VDC
C5	1010410-20		4300UF	±1%	500VDC
C6	SEE NOTE 4		NOM		500VDC
C7	1006755-26		12	±10%	20VDC
C8	1006777-30		.0068	±10%	100VDC
C9	1006777-30		.0068	±10%	100VDC
C10	1010410-10		5100UF	±2%	500VDC
C11	1010410-10		5100UF	±2%	500VDC
C12	1006755-31		10	±10%	20 VDC
C13	1010353-045		22	±10%	50VDC
C14	1006755-21		22	±10%	15VDC
C15	1006755-21		22	±10%	15 VDC
C16	1006755-21		22	±10%	15 VDC
C17	1006789-002	CAPACITOR	47	±10%	50VDC
CR1	1010732-22	DIODE	HZ8551		
CR2	1010385		IN660		
CR3	1010385		IN660		
CR4	1010385		IN660		
CR5	1010385		IN660		
CR6	1006838				
CR7	1010777-2		IN3891		
CR8	1010777-2		IN3891		
CR9	1010777-1		IN3881		
CRI0	1010777-1		IN3881		
Q1	1006752	TRANSISTOR	2N94		
Q2	1010652-4				
Q3	1010652-4				
Q4	1010343-2		2N2364A		
Q5	1010343-2		2N2364A		
Q6			2N2880		
Q7	1010843-2		2N2880		
Q8	1010345-1		2N2303		
Q9	1010269-1	TRANSISTOR	2N2151		
T1	1006319	TRANSFORMER			
T2	101035-2	TRANSFORMER			
T3	1010927	TRANSFORMER			
L1	1010926	INDUCTOR			

R14	
PART NO.	VALUE
100364-559	40.2K
-551	36.5K
-543	33.2K
-535	30.1K
-525	26.7K
-517	24.3K
-509	22.1K
-501	20 K
-493	18.2K
-483	16.2K
-475	14.7K
-467	13.5K
-459	12.1K
1010364-451	11K

QTY. REQD.		PART OR DESCRIPTION		MATERIAL OR PARTS		NOMENCLATURE OR DESCRIPTION		DRAWING NO.	
LIST OF MATERIALS		MIT		LAB		MANNED SPACECRAFT CENTER		HOUSTON, TEXAS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES IS DO NOT SCALE THIS DRAWING		INSTRUMENTATION		CAMPSHORE, MASS		SCHEMATIC		POWER SUPPLY	
DRAWN: <i>C. L. Long</i>		CHECKED: <i>R. E. Smith</i>		APPROVED: <i>M. E. Smith</i>		CDU ELECTRONICS		DRAWING NO.	
MATERIAL		APPROVED: MIT		80230		E		200062	
NEXT ASSY		USED ON		AF APPROVED: <i>M. E. Smith</i>		SCALE NONE		SHEET 8 OF 2	
APPLICATION									

NOTICE - UNDER GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA AND DESIGNS FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A REPEATEDLY SOLICITED REQUEST FOR PROPOSALS OR OTHER OFFER BY THE UNITED STATES GOVERNMENT THEREBY INCUR NO RESPONSIBILITY NOR ANY OBLIGATION TO THE GOVERNMENT. AND THE FACT THAT THE GOVERNMENT HAS MADE FORMULATES, OR FORMULATED, OR HAS OR MAY BE SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE CONSIDERED AN IMPLICATION OR OTHER BASIS FOR ANY RIGHTS OR LICENSES THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR COMPANY, MAY HAVE OR MAY OBTAIN OR PERMISSION TO REPRODUCE OR TO MAKE ANY SUCH DATA.



QTY		PART OR IDENTIFYING NO.		MATERIAL OR NOTES		NOMENCLATURE OR DESCRIPTION		FIND NO.	
LIST OF MATERIALS									
		MIL INSTRUMENTATION LAB CAMBRIDGE MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES A B C D DO NOT SCALE THIS DRAWING		DRAWN <u>W. J. Smith</u> <u>1/26/62</u>		SCHEMATIC POWER SUPPLY CDU ELECTRONICS					
		CHECKED <u>W. J. Smith</u> <u>1/26/62</u>							
		APPROVED <u>W. J. Smith</u> <u>1/26/62</u>							
MATERIAL		APPROVED <u>W. J. Smith</u> <u>1/26/62</u>		CODE IDENT NO.		SIZE		DRAWING NO.	
NEXT ASSY USED ON		APPROVED <u>W. J. Smith</u> <u>1/26/62</u>		80230		E		2010062	
APPLICATION		APPROVED <u>W. J. Smith</u> <u>1/26/62</u>		DATE		SCALE NONE		SHEET 1 of 2	

REVISIONS				
REV	ZONE	DESCRIPTION	DATE	APPROVED
A		REVISED PER TORR 17199	10/1/79	W. J. [Signature]
B		REVISED PER TORR 19867	10/1/79	W. J. [Signature]
C		REVISED PER TORR 19286	10/1/79	W. J. [Signature]

REF DES	PART NO.	DESIGNATION	VALUE	TOL	RATING
R1	1006750-37	RESISTOR	1600	± 2%	1/4W
R2	1006750-56		10K	± 2%	1/4W
R3	1006750-43		3000	± 2%	1/4W
R4	1006750-56		10K	± 2%	1/4W
R5	1006750-70		39K	± 2%	1/4W
R6	100364-443		10K	± 1%	1/8W
R7	100364-443		10K	± 1%	1/8W
R8	1006750-70		39K	± 2%	1/4W
R9	100363-613		76.8K	± 1%	1/4W
R10	100363-613		76.8K	± 1%	1/4W
R11	1006750-56		10K	± 2%	1/4W
R12	1006750-56		10K	± 2%	1/4W
R13	1006750-28		680	± 2%	1/4W
R14	SEE NOTE 4		NOM	± 1%	1/8W
R15	100364-367		4020	± 1%	1/8W
R16	1006750-1		51	± 2%	1/4W
R17	100364-327		2490	± 1%	1/8W
R18	1006750-19		300	± 2%	1/4W
R19	1006750-19		300	± 2%	1/4W
R20	1006750-36		1500	± 2%	1/4W
R21	1006750-39		2000	± 2%	1/4W
R22	100369-148		20	± 5%	1/8W
R23	100369-148		20	± 5%	1/8W
R24	1006750-49		500	± 2%	1/4W
R25	1006750-32		1000	± 2%	1/4W
R26	1006750-15		200	± 2%	1/4W
R27	100364-443		10K	± 1%	1/8W
R28	100604-22	RESISTOR	1000	± 1%	1W
C1	100410-6	CAPACITOR	360 UUF	± 2%	500VDC
C2	100410-6		360 UUF	± 2%	500VDC
C3	SEE NOTE 4		NOM		500VDC
C4	100410-20		430 UUF	± 1%	500VDC
C5	100410-20		430 UUF	± 1%	500VDC
C6	SEE NOTE 4		NOM		500VDC
C7	1006755-26		1.2	± 10%	20VDC
C8	1006777-30		.0068	± 10%	100VDC
C9	1006777-30		.0068	± 10%	100VDC
C10	100410-10		510 UUF	± 2%	500VDC
C11	100410-10		510 UUF	± 2%	500VDC
C12	1006755-31		10	± 10%	20VDC
C13	100393-045		22	± 10%	50VDC
C14	1006755-21		22	± 10%	15VDC
C15	1006755-21		22	± 10%	15VDC
C16	1006755-21		22	± 10%	15VDC
C17	1006789-002	CAPACITOR	47	± 10%	50VDC
CR1	100372-22	DIODE	HZB551		
CR2	100385		IN660		
CR3	100385		IN660		
CR4	100385		IN660		
CR5	100385		IN660		
CR6	100259-001		IN3891		
CR7	100777-2		IN3891		
CR8	100777-2		IN3891		
CR9	100777-1		IN3891		
CR10	100777-1		IN3891		
CR11	100830-7	DIODE	IN963B		
Q1	1006752	TRANSISTOR	2N94		
Q2	100652-4				
Q3	100652-4				
Q4	100343-2		2N2364A		
Q5	100343-2		2N2364A		
Q6	100843-2		2N2880		
Q7	100843-2		2N2880		MATCHED PAIR
Q8	100245-1		2N2303		
Q9	100269-1	TRANSISTOR	2N251		
T1	1006319	TRANSFORMER			
T2	10035-2	TRANSFORMER			
T3	100327	TRANSFORMER			
L1	100326	INDUCTOR			

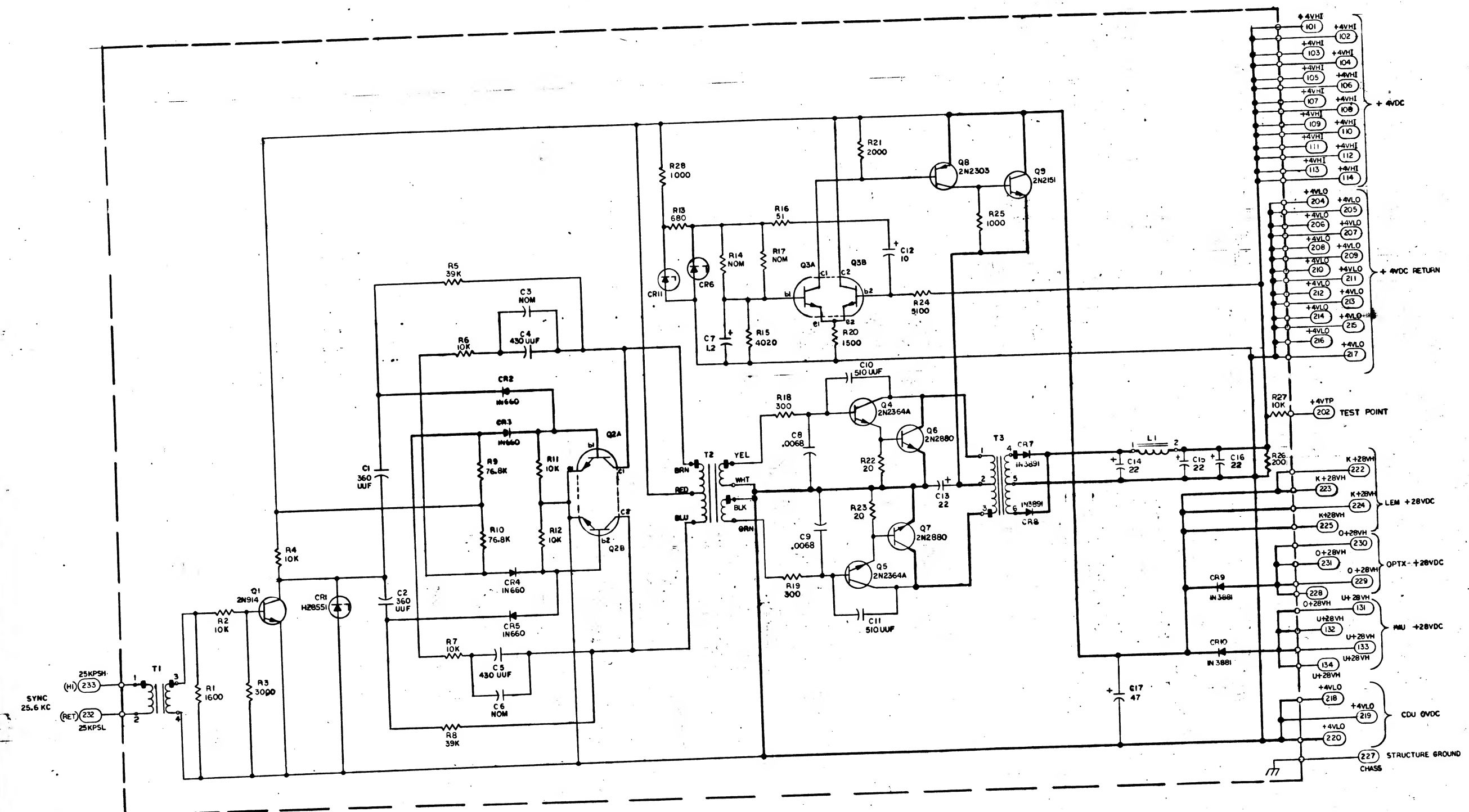
C3, C6			
PART NO.	VALUE	TOL	RATING
100409-1	10 UUF	± 2%	500VDC
-2	1 UUF	± 2%	
-3	12 UUF	± 2%	
-4	13 UUF	± 2%	
-5	15 UUF		
-6	16 UUF		
-7	18 UUF		
-8	20 UUF		
-9	22 UUF		
-10	24 UUF		
-11	27 UUF		
100409-12	30 UUF		

R14	
PART NO.	VALUE
100364-559	40.2K
-551	36.5K
-543	33.2K
-535	30.1K
-525	26.7K
-517	24.3K
-509	22.1K
-501	20 K
-493	18.2K
-485	16.2K
-475	14.7K
-467	13.3K
-459	12.1K
100364-451	11K

MASTER

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	PRD NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS				
MANNED SPACECRAFT CENTER HOUSTON, TEXAS				
SCHEMATIC POWER SUPPLY CDU ELECTRONICS				
DRAWN: [Signature] CHECKED: [Signature] APPROVED: [Signature] DATE: [Date]				
CODE IDENT NO. 80230 SCALE NONE				
DRAWING NO. 2010062 SHEET 2 OF 2				

REV	DATE	DESCRIPTION	BY	CHK	DATE	APPROVED
A	12/19/66	REVISED PER TDR 17199	JL	CC	12/19/66	
B	12/19/66	REVISED PER TDR 1967	JL	CC	12/19/66	
C	12/19/66	REVISED PER TDR 19286	JL	CC	12/19/66	
D	12/19/66	REVISED PER TDR 21458	JL	CC	12/19/66	



- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. RESISTOR VALUES ARE EXPRESSED IN OHMS
 3. CAPACITOR VALUES ARE EXPRESSED IN MICROFARADS
 4. SELECT C3, C6, R4 AND R7 PER ATP FROM APPROPRIATE CHART
 5. — INDICATES 0.020 RIBBON
 6. — INDICATES NO.20 GA WIRE

REF DWG
DWG NO. 2007142 POWER SUPPLY ASSY
CDU ELECTRONICS

QTY	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FINO NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB				
MANNED SPACECRAFT CENTER				
HOUSTON, TEXAS				
SCHEMATIC POWER SUPPLY				
CDU ELECTRONICS				
DRAWING NO. 2010062				
CODE IDENT NO. 80230				
DATE 12/19/66				
SCALE NONE				
SHEET 1 OF 2				

MASTER

REVISIONS					
REV	ZONE	DESCRIPTION	BY	CHK	DATE
A		REVISED PER TDDR 17199	JAL	RS	11/1/66
B		REVISED PER TDDR 1967	JAL	RS	11/1/66
C		REVISED PER TDDR 19286	JAL	RS	11/1/66
D		REVISED PER TDDR 21458	JAL	RS	11/1/66

REF DES	PART NO.	DESIGNATION	VALUE	TOL	RATING
R1	1006750-37	RESISTOR	1600	±2%	1/4W
R2	1006750-56		10K	±2%	1/4W
R3	1006750-43		3000	±2%	1/4W
R4	1006750-56		10K	±2%	1/4W
R5	1006750-70		39K	±2%	1/4W
R6	1010364-443		10K	±1%	1/8W
R7	1010364-443		10K	±1%	1/8W
R8	1006750-70		39K	±2%	1/4W
R9	1010363-443		76.8K	±1%	1/4W
R10	1010363-443		76.8K	±1%	1/4W
R11	1006750-56		10K	±2%	1/4W
R12	1006750-56		10K	±2%	1/4W
R13	1006750-28		680	±2%	1/4W
R14	SEE NOTE 4		NOM	±1%	1/8W
R15	1010364-367		4020	±1%	1/8W
R16	1006750-1		51	±2%	1/4W
R17	SEE NOTE 4		NOM	±2%	1/8W
R18	1006750-19		300	±2%	1/4W
R19	1006750-19		300	±2%	1/4W
R20	1006750-36		1500	±2%	1/4W
R21	1006750-39		2000	±2%	1/4W
R22	1010369-148		20	±5%	1/8W
R23	1010369-148		20	±5%	1/8W
R24	1006750-49		500	±2%	1/4W
R25	1006750-52		800	±2%	1/4W
R26	1006750-15		200	±2%	1/4W
R27	1010364-443		10K	±1%	1/8W
R28	1010604-22	RESISTOR	1000	±1%	1W
C1	1010410-6	CAPACITOR	360UF	±2%	500VDC
C2	1010410-6		360UF	±2%	500VDC
C3	SEE NOTE 4		NOM		
C4	1010410-20		430UF	±1%	500VDC
C5	1010410-20		430UF	±1%	500VDC
C6	SEE NOTE 4		NOM		
C7	1006755-26		L2	±10%	20VDC
C8	1006777-30		.0068	±10%	100VDC
C9	1006777-30		.0068	±10%	100VDC
C10	1010410-10		510UF	±2%	500VDC
C11	1010410-10		510UF	±2%	500VDC
C12	1006755-34		10	±10%	20VDC
C13	1010383-045		22	±10%	50VDC
C14	1006755-21		22	±10%	15VDC
C15	1006755-21		22	±10%	15VDC
C16	1006755-21		22	±10%	15VDC
C17	1006789-002	CAPACITOR	47	±10%	50VDC
CR1	1010372-22	DIODE	HZ8551		
CR2	1010385		IN660		
CR3	1010385		IN660		
CR4	1010385		IN660		
CR5	1010385		IN660		
CR6	1010259-002				
CR7	1010777-2		IN3891		
CR8	1010777-2		IN3891		
CR9	1010777-1		IN3881		
CR10	1010777-1		IN3881		
CR11	1010830-7	DIODE	IN963B		
Q1	1006752	TRANSISTOR	2N94		
Q2	1010652-4				
Q3	1010652-4				
Q4	1010343-2		2N2364A		
Q5	1010343-2		2N2364A		
Q6			2N2880		
Q7	1010843-2		2N2880		
Q8	1010745-1		2N2303		
Q9	1010269-1	TRANSISTOR	2N2151		
T1	1006319	TRANSFORMER			
T2	101035-2	TRANSFORMER			
T3	1010327	TRANSFORMER			
L1	1010926	INDUCTOR			

C3, C6			
PART NO.	VALUE	TOL	RATING
1010409-1	10UF	±25UF	500VDC
-2	1UF	±25UF	
-3	12UF	±25UF	
-4	13UF	±2%	
-5	15UF		
-6	18UF		
-7	18UF		
-8	20UF		
-9	22UF		
-10	24UF		
-11	27UF		
-12	30UF		
-13	33UF		
-14	36UF		
1010409-15	39UF		

R14	
PART NO.	VALUE
1010364-769	499 K
-675	162 K
-629	93.1 K
-595	61.9 K
-573	47.5 K
-555	38.3 K
-539	31.6 K
-527	27.4 K
-515	23.7 K
-505	21.0 K
-499	18.7 K
1010364-487	16.9 K

R17	
PART NO.	VALUE
1010364-343	3010
-333	2670
-323	2370
-315	2150
1010364-307	1960

MASTER

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIG NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>Carroll Long</i>		SCHEMATIC POWER SUPPLY CDU ELECTRONICS		
CHECKED <i>W. H. Frank</i>		DRAWING NO. 2010062		
APPROVED <i>W. H. Frank</i>		SHEET 2 OF 2		
APPROVED <i>W. H. Frank</i>		SCALE NONE		
DATE				
NEXT ASSY	USED ON	APPLICATION		

2010062

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- REF DWG
DWG NO. 2007142 POWER SUPPLY ASSY
CDU ELECTRONICS

QTY REQD		PART OR IDENTIFYING NO.		MATERIAL OR NOTES		NOMENCLATURE OR DESCRIPTION		FIND NO.	
LIST OF MATERIALS									
		MIL INSTRUMENTATION LAB CAMBRIDGE MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS					
		DRAWN <i>[Signature]</i> 10-1-60		SCHEMATIC POWER SUPPLY CDU ELECTRONICS					
		CHECKED <i>[Signature]</i> 10-1-60							
		APPROVED <i>[Signature]</i> 10-1-60							
		APPROVED <i>[Signature]</i>							
		MATERIAL		APPROVED <i>[Signature]</i> 11-1-60		CODE NO.		DRAWING NO.	
NEXT ASSY		USED ON		MIL		80230		E	
APPLICATION				APPROVED <i>[Signature]</i> 11-1-60		SCALE NONE		20100362	
				APPROVED <i>[Signature]</i> 11-1-60				SHEET 1 OF 3	

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C3, C6			
PART NO.	VALUE	TOL	RATING
100A09-1	100UF	±21UF	500VDC
-2	11UF	±5UF	
-3	12UF	±5UF	
-4	13UF	±5UF	
-5	15UF	±2%	
-6	16UF		
-7	18UF		
-8	20UF		
-9	22UF		
-10	24UF		
-11	27UF		
-12	30UF		
-13	33UF		
-14	36UF		
100A09-15	38UF		

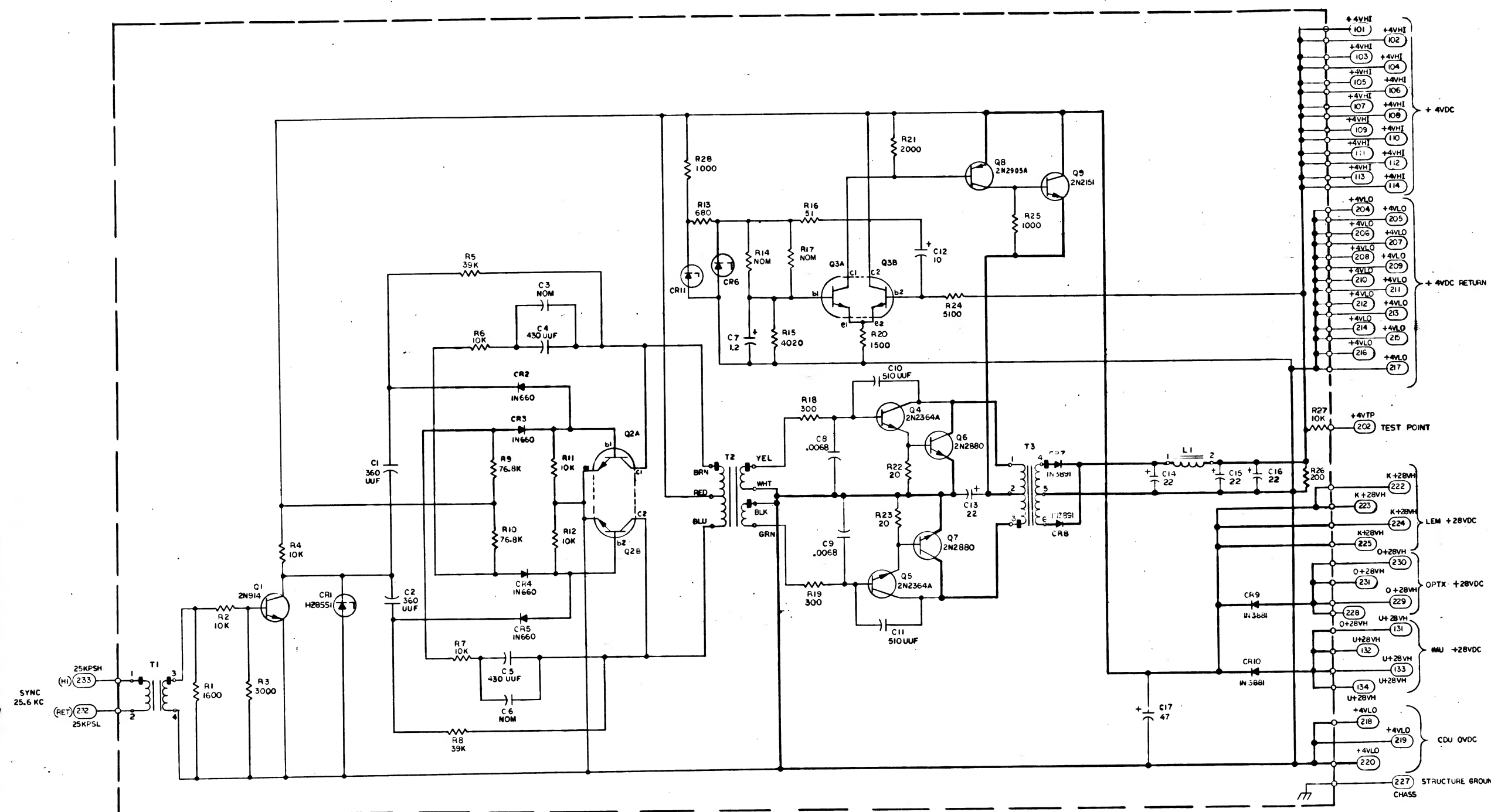
R14	
PART NO.	VALUE
100364-760	499 K
- 675	1E 2 K
- 629	93J K
- 595	61.9K
- 573	47.5 K
- 555	38.3K
- 539	31.6 K
- 527	27.4K
- 515	23.7K
- 505	21.0K
- 495	18.7K
1010364-487	16.9 K

R17	
PART NO.	VALUE
1010364-343	3010
-333	2670
-323	2370
-315	2150
1010364-307	1960

QTY REQD		PART OR IDENTIFYING NO.		MATERIAL OR NOTES		NOMENCLATURE OR DESCRIPTION		FIN NO.	
MIT INSTRUMENTATION LAB CAMBRIDGE MASS						LIST OF MATERIALS			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES \pm \pm \pm \pm \pm DO NOT SCALE THIS DRAWING MATERIAL _____						MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
						SCHEMATIC POWER SUPPLY CDU ELECTRONICS			
						DRAWN: <i>C. A. Lutz</i> <i>12/25/62</i> CHECKED: <i>C. A. Lutz</i> <i>12/25/62</i> APPROVED: <i>M. Frank</i> <i>12/26/62</i> APPROVED: _____			
						APPROVED: <i>M. Frank</i> <i>12/26/62</i> MIT <i>12/26/62</i>			
NEXT ASSY		USED ON		CODE IDENT NO		SIZE		DRAWING NO	
APPLICATION				80230		E		2010062	
				APPROVED: <i>M. Frank</i> <i>12/26/62</i>		SCALE: ONE		SHEET: 1 OF 2	

1. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.
2. CAPACITOR VALUES ARE IN MICROFARADS.
3. RESISTOR VALUES ARE IN OHMS.
4. SELECT C3, C6, R14 AND R17 PER ATP FROM APPROPRIATE CHART.
5. ——— INDICATES .010 X .020 RIBBON.
6. ——— INDICATES NO.20 GA WIRE.

REV	DATE	DESCRIPTION	BY	CHK	DATE	APPROVED
A	17/1/66	REVISED PER TDR 17199	JL	CP		
B	21/1/66	REVISED PER TDR 1967	JL	CP		
C	25/1/66	REVISED PER TDR 19206	JL	CP		
D	26/1/66	REVISED PER TDR 21458	JL	CP		
E	28/1/66	REVISION STATUS CHANGED	JL	CP		
F	29/1/66	REVISED PER TDR 22591	JL	CP		



- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. RESISTOR VALUES ARE EXPRESSED IN OHMS
 3. CAPACITOR VALUES ARE EXPRESSED IN MICROFARADS
 4. SELECT C3, C6, R14 AND R17 PER ATP FROM APPROPRIATE CHART
 5. ——— INDICATES .010 X .020 RIBBON
 6. ——— INDICATES NO.20 GA WIRE

REF DWG
DWG NO. 2007142 POWER SUPPLY ASSY
CDU ELECTRONICS

QTY	UNIT	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIG. NO.
LIST OF MATERIALS					
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS					
MANNED SPACECRAFT CENTER HOUSTON, TEXAS					
SCHEMATIC POWER SUPPLY CDU ELECTRONICS					
DRAWN: [Signature] 1/24/66					
CHECKED: [Signature] 2/1/66					
APPROVED: [Signature] 2/1/66					
DO NOT SCALE THIS DRAWING					
MATERIAL					
APPROVED: [Signature] 1/24/66					
MIT 80230 E 2010062					
DATE SCALE NONE SHEET 1 OF 2					

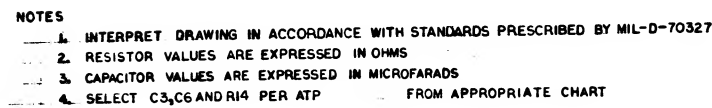
REF DES	PART NO.	DESIGNATION	VALUE	TOL	RATING
R1	1006750-37	RESISTOR	1600	± 2%	1/4W
R2	1006750-56		10K	± 2%	1/4W
R3	1006750-43		3000	± 2%	1/4W
R4	1006750-76		10K	± 2%	1/4W
R5	1006750-70		39K	± 2%	1/4W
R6	100364-443		10K	1%	1/8W
R7	100364-443		10K	± 1%	1/8W
R8	1006750-70		39K	± 2%	1/4W
R9	100363-443		76.8K	± 1%	1/4W
R10	100363-443		76.8K	± 1%	1/4W
R11	1006750-65		10K	± 2%	1/4W
R12	1006750-56		10K	± 2%	1/4W
R13	1006750-28		680	± 2%	1/4W
R14	SEE NOTE 4		NOM	± 1%	1/8A
R15	100364-587		1020	± 1%	1/8A
R16	1006750-70		51	± 2%	1/4W
R17	SEE NOTE 4		NOM	± 1%	1/8W
R18	1006750-0-19		300	± 2%	1/4W
R19	1006750-19		300	± 2%	1/4W
R20	1006750-36		1500	± 2%	1/4W
R21	1006750-36		2000	± 2%	1/4W
R22	100369-148		20	± 2%	1/8W
R23	100369-148		20	± 2%	1/8W
R24	1006750-49		40	± 2%	1/4W
R25	1006750-32		100C	± 2%	1/4W
R26	1006750-45		200	± 2%	1/4W
R27	1010364-113		10K	± 1%	1/8W
R28	1010604-22	RESISTOR	1000	± 1%	1W
C1	1010410-6	CAPACITOR	360UUF	± 2%	500VDC
C2	1010410-2		360UUF	± 2%	500VDC
C3	SEE NOTE 4		NOM		500VDC
C4	1010410-20		43.0UUF	± 1%	500VDC
C5	1010410-20		430UUF	± 1%	500VDC
C6	SEE NOTE 4		NOM		500VDC
C7	1006755-26		12	± 10%	20VDC
C8	1006777-30		0.0068	± 10%	100VDC
C9	1006777-30		0.0068	± 10%	100VDC
C10	1010410-10		510UUF	± 2%	500VDC
C11	1010410-10		510UUF	± 2%	500VDC
C12	1006755-31		10	± 10%	20VDC
C13	100362-045		22	± 10%	5VDC
C14	1006755-21		22	± 10%	15VDC
C15	1006755-21		22	± 10%	15VDC
C16	1006755-21		22	± 10%	15VDC
C17	1006789-002	CAPACITOR	47	± 10%	50VDC
CRI	1010372-22	DIODE	HZ8551		
C2	1010385		1N660		
C3	1010385		1N660		
C4	1010385		1N660		
C5	1010385		1N660		
C6	1010259-002				
C7	1010777-2		1N3891		
C8	1010777-2		1N3891		
C9	1010777-1		1N3891		
C10	1010777-1		1N3891		
C11	1008815-5	DIODE	1N963B		
Q1	1006752	TRANSISTOR	2N934		
Q2	1010552-4				
Q3	1010552-4				
Q4	1010343-2		2N2344A		
Q5	1010343-2		2N2344A		
Q6	1010343-2		2N2890		
Q7	1010843-2		2N2880		WATCHED PAIR
Q8	1010813-1		2N2905A		
Q9	1010629-1	TRANSISTOR	2N2151		
T1	1006319	TRANSFORMER			
T2	1010318-2	TRANSFORMER			
T3	1010327	TRANSFORMER			
L1	1010326	INDUCTOR			

C3, C6			
PART NO.	VALUE	TOL	MATING
100A09-1	100UF	25%UF	500VDD
-2	10UF	25%UF	
-3	12UF	25%UF	
-4	13UF	±5%	
-5	15UF		
-6	16UF		
-7	18UF		
-8	20UF		
-9	22UF		
-10	24UF		
-11	27UF		
-12	30UF		
-13	35UF		
-14	35UF		
100A09-15	35UF		

[illegible]

R17	
PART NO.	VALUE
1010364-343	3010
-333	2670
-323	2370
-315	2150
1010364-307	1960

[illegible]



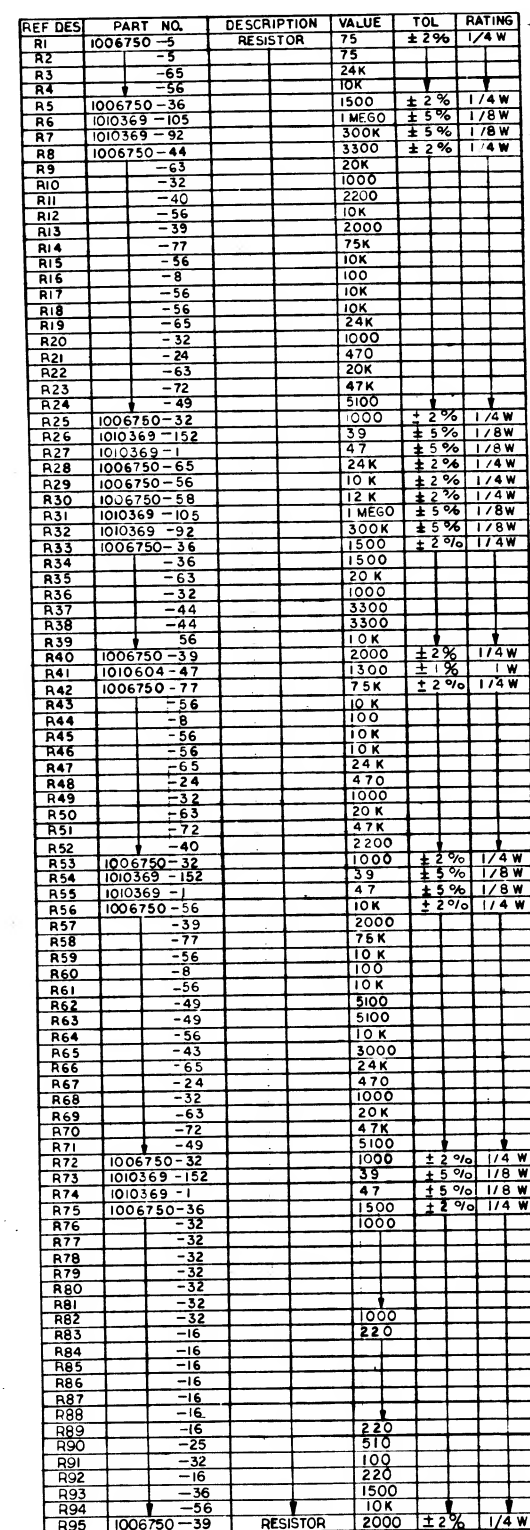
REF DWG
DWG NO. 2007142 POWER SUPPLY ASSY
CDU ELECTRONICS

QTY REQD		PART OR IDENTIFYING NO.		MATERIAL OR NOTE		NOMENCLATURE OR DESCRIPTION		FIND NO.	
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.				LIST OF MATERIALS					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ F RESISTOR VALUES ARE IN Ω TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ± DO NOT SCALE THIS DRAWING				MANNED SPACECRAFT CENTER HOUSTON, TEXAS					
				DRAWN: <i>[Signature]</i> <i>1/28/62</i> CHECKED: <i>[Signature]</i> <i>1/28/62</i> APPROVED: <i>[Signature]</i> <i>1/28/62</i> APPROVED _____ SCHEMATIC POWER SUPPLY CDU ELECTRONICS					
MATERIAL				APPROVED: <i>[Signature]</i> <i>1/28/62</i>		CODE IDENT. NO.		DRAWING NO.	
NEXT ASSY _____				APPROVED: <i>[Signature]</i> <i>3/26/62</i>		E		2010062	
APPLICATION _____				APPROVED: _____		DATE _____		SCALE _____	
								SHEET 1 of 2	

REF DES	PART NO	DESIGNATION	VALUE	TOL	RATING
R1	I006750-37	RESISTOR	1600	± 2%	1/4W
R2	I006750-56		10K	± 2%	1/4W
R3	I006750-43		3000	± 2%	1/4W
R4	I006750-56		10K	± 2%	1/4W
R5	I006750-70		39K	± 2%	1/4W
R6	I01364-443		10 K	± 1%	1/8W
R7	I01364-443		10K	± 1%	1/8W
R8	I006750-70		39K	± 2%	1/4W
R9	I01363-63		76.8K	± 1%	1/4W
R10	I01363-63		76.8K	± 1%	1/4W
R11	I006750-56		10K	± 2%	1/4W
R12	I006750-56		10K	± 2%	1/4W
R13	I006750-52		6800	± 2%	1/2W
R14	I0136364		NOM		
R15	I01364-367		4020	± 1%	1/8W
R16	I006750-1		51	± 2%	1/4W
R17	I01364-327		2490	± 1%	1/8W
R18	I006750-19		300	± 2%	1/4W
R19	I006750-19		300	± 2%	1/4W
R20	I006750-36		1500	± 2%	1/4W
R21	I006750-39		2000	± 2%	1/4W
R22	I00369-48		20	± 5%	1/8W
R23	I00369-48		20	± 5%	1/8W
R24	I006750-49		500	± 2%	1/4W
R25	I006750-32		1000	± 2%	1/4W
R26	I006750-45		200	± 2%	1/4W
R27	I01364-143	RESISTOR	10 K	± 1%	1/8W
C1	I010410-6	CAPACITOR	360UF	± 2%	500VDC
C2	I010410-6		360UF	± 2%	500VDC
C3	I010409		NOM		500VDC
C4	I010410-20		430UF	± 1%	500VDC
C5	I010410-20		430UF	± 1%	500VDC
C6	I010409		NOM		500VDC
C7	I006755-26		12	± 10%	20VDC
C8	I006777-30		.0068	± 10%	100VDC
C9	I006777-30		.0068	± 10%	100VDC
C10	I010410-10		510UF	± 2%	500VDC
C11	I010410-10		510UF	± 2%	500VDC
C12	I006755-31		10	± 10%	20 VDC
C13	I010393-045		22	± 10%	50VDC
C14	I006755-21		22	± 10%	15 VDC
C15	I006755-21		22	± 10%	15 DC
C16	I006755-21		22	± 10%	15 VDC
C17	I006789-002	CAPACITOR	47	± 10%	50VDC
D1	I010385	DIODE	HZ 8551		
CR1	I010372-22				
CR2	I010385	TRANSFORMER	IN660		
CR3	I010385		IN660		
CR4	I010385		IN660		
CR5	I010385		IN660		
CR6	I006838				
CR7	I010777-2		IN3891		
CR8	I010777-2	DIODE	IN3891		
Q1	I006752	TRANSISTOR	2N994		
Q2	I010652-4				
Q3	I010652-4				
Q4	I010343-2		2N236A		
Q5	I010343-2		2N236A		
Q6	I010343-2		2N2880	MATCHED PAIR	
Q7	I010343-2		2N2880		
Q8	I010345-1		2N2303		
Q9	I010269-1	TRANSISTOR	2N2511		
T1	I006319	TRANSFORMER			
T2	I010345-2	TRANSFORMER	DO-T39		
T3	I010327	TRANSFORMER			
L1	I00926	INDUCTOR			

PART NO.		VALUE
100364	-559	40.2K
	-551	36.5K
	-543	33.2K
	-535	30.1K
	-525	26.7K
	-517	24.3K
	-509	22.1K
	-501	20 K
	-493	18.2K
	-483	16.2K
	-475	14.7K
	-467	13.3K
	-459	12.1K
1010364	-451	11K

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	PW NO.
			LIST OF MATERIALS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES .25 .10 .05 .02 .01 .005 .0025 DO NOT SCALE THIS DRAWING	M1T INSTRUMENTATION LAB CAMBRIDGE, MASS.	MANNED SPACECRAFT CENTER HOUSTON, TEXAS	SCHEDULE POWER SUPPLY CDU ELECTRONICS	2010062
MATERIAL	DRAWN BY <i>Chapman</i> CHECKED BY <i>Chapman</i> APPROVED BY <i>Chapman</i>	CODE IDENT NO. SIZE M1T E	DRAWING NO.	2010062
NEXT ASSY USED ON	APPROVED BY <i>Chapman</i> M1T	SCALE <u>ONE</u>	SHEET 2 OF 2	
APPLICATION				

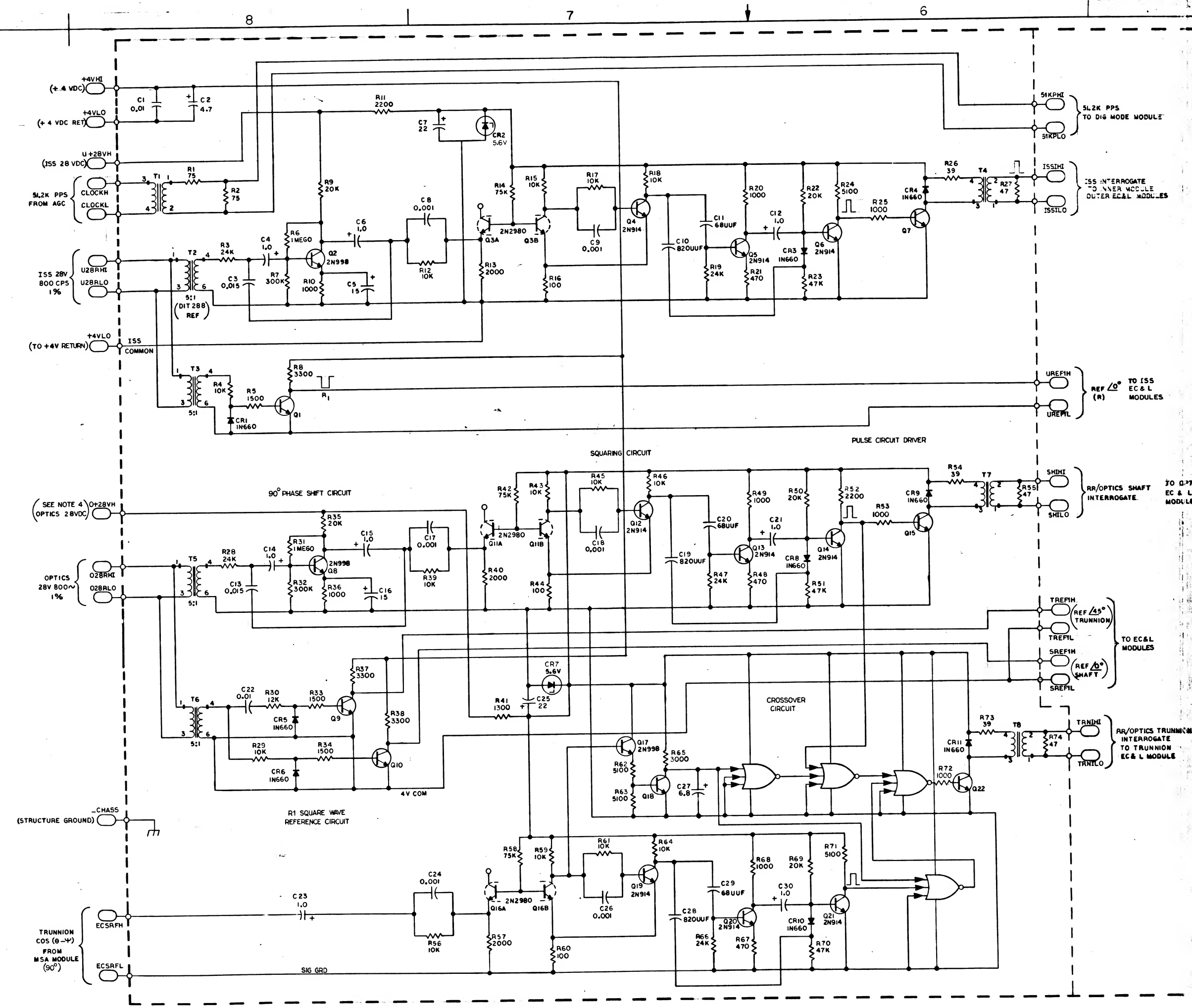


REF DES	PART NO.	DESCRIPTION	VALUE
C1	10C3777-31	CAPACITOR	0.01
C2	10C755-0		4.7
C3	10C755-39		0.01
C4	10C755-69		1.0
C5	10C755-33		1.0
C6	10C755-69		0.01
C7	10C755-21		22
C8	10C777-24		0.01
C9	10C777-22		0.01
C10	10C777-23		0.01
C11	10C777-0		0.01
C12	10C755-69		0.01
C13	10C777-35		0.01
C14	10C755-69		0.01
C15	10C755-69		0.01
C16	10C755-33		1.0
C17	10C777-24		0.01
C18	10C777-24		0.01
C19	10C777-23		0.01
C20	10C777-0		0.01
C21	10C755-69		0.01
C22	10C777-21		0.01
C23	10C755-69		0.01
C24	10C777-24		0.01
C25	10C755-21		22
C26	10C777-24		0.01
C27	10C755-79		5.6
C28	10C777-23		0.01
C29	10C777-10		5.6
C30	10C755-69		1.0
C31	10C755-79		5.6
C32	10C755-75	CAPACITOR	5.6
CR1	10I0385	DIODE	IN660
CR2	10I0372-12		IN660
CR3	10I0385		IN660
CR4	10I0385		IN660
CR5	10I0385		IN660
CR6	10I0385		IN660
CR7	10I0372-12		IN660
CR8	10I0385		IN660
CR9	10I0385		IN660
CR10	10I0385		IN660
CR11	10I0385		IN660
CR12	10I0385-9		IN660
CR13	10I0385		IN660
CR14			
CR15			
CR16			
CR17			
CR18			
CR19			
CR20	10I0385		IN660
CR21	10I0385-9	DIODE	IN660
Q1	10I0343-3	TRANSISTOR	2N938
Q2	10I0343-3		2N2980
Q3	10I0652-1		2N914
Q4	10I0652		2N914
Q5	10I0652		2N914
Q6	10I0652		2N914
Q7	10I0343-3		2N938
Q8	10I0342		2N938
Q9	10I0343-3		2N938
Q10	10I0343-3		2N938
Q11	10I0652-1		2N2980
Q12	10I0652		2N914
Q13	10I0652		2N914
Q14	10I0652		2N914
Q15	10I0343-3		2N914
Q16	10I0652-1		2N2980
Q17	10I0343-3		2N938
Q18	10I0343-3		2N938
Q19	10I0652		2N914
Q20	10I0652		2N914
Q21	10I0652		2N914
Q22	10I0343-3		2N914
Q23	10I0343-3		2N914
Q24	10I0652		2N914
Q25			
Q26			
Q27			
Q28			
Q29			
Q30			
Q31	10I0752		2N914
Q32	10I0343-3	TRANSISTOR	2N914
T1	10C6762-2	TRANSFORMER	
T2	10I0275		
T3	10I0275		
T4	10C6762-2		
T5	10I0275		
T6	10I0275		
T7	10C6762-2		
T8			
T9			
T10			
T11			
T12			
T13			
T14			
T15			
T16	10C6762-2	TRANSFORMER	

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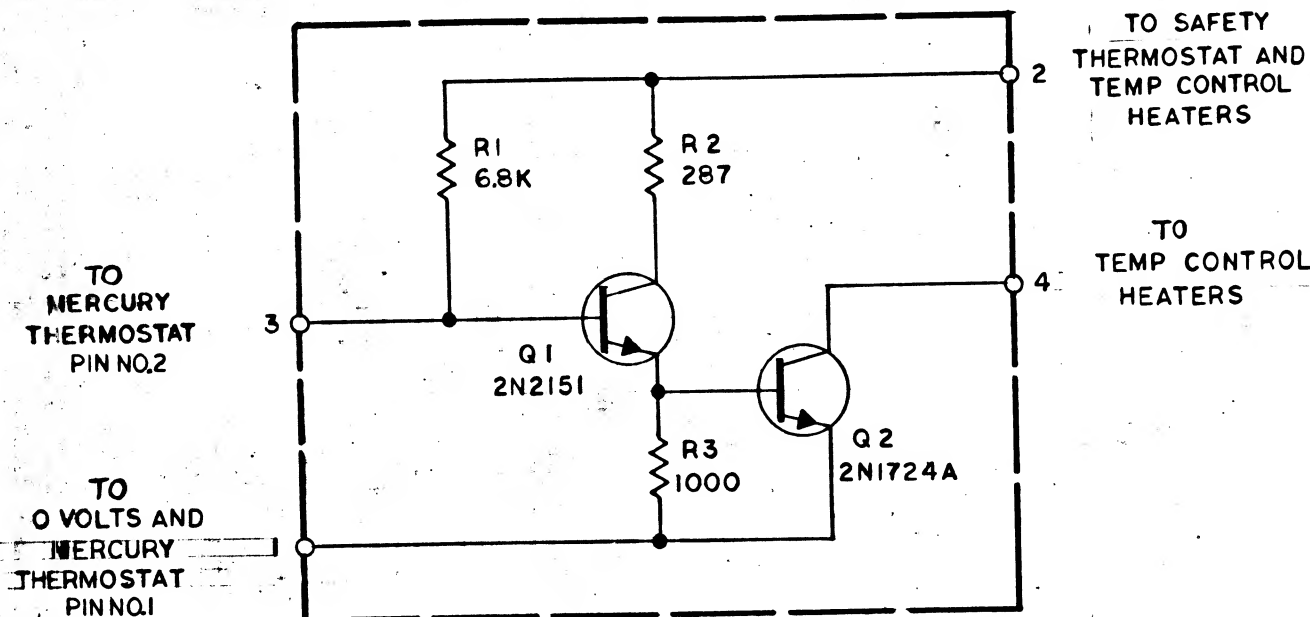
- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. RESISTOR VALUES ARE IN OHMS
 3. CAPACITOR VALUES ARE IN MICROFARADS
 4. PIN CALLOUTS ARE WIREWRAP PROGRAM DESIGNATIONS

2010063



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REVISIONS					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE
A		REVISED PER TDRR 18093	TH	CH	5 APR 65



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R 1	1006760 - 52	RESISTOR	6.8K	$\pm 2\%$	1/2 W
R 2	1010826 - 237	RESISTOR	287	$\pm 1\%$	15 W
R 3	1006750 - 32	RESISTOR	1000	$\pm 2\%$	1/4 W
Q 1	1010269 - 4	TRANSISTOR	2N2151		
Q 2	1010273 - 4	TRANSISTOR	2N1724A		

REF DWG:
TEMPERATURE CONTROL MODULE ASSY
DWG NO. 2007064

NOTES:

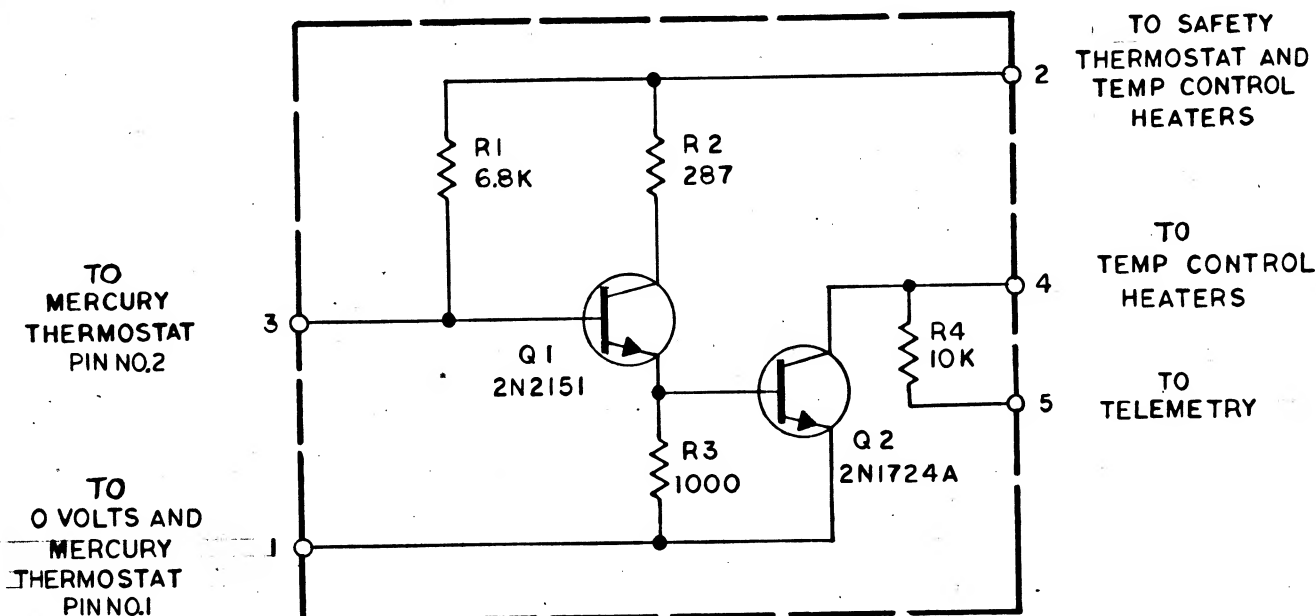
- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES \pm \pm \pm DO NOT SCALE THIS DRAWING	
MATERIAL	
NEXT ASSY	USED ON
APPLICATION	

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION		FIN NO.
LIST OF MATERIALS					
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
DRAWN	<i>Q. D. Leo</i>	21 DEC 64	SCHEMATIC, TEMPERATURE CONTROL MODULE		
CHECKED	<i>A. J. P. [Signature]</i>	23 DEC 64			
APPROVED	<i>[Signature]</i>	20 JAN 65			
APPROVED	<i>A. C. [Signature]</i>	1-20-65			
APPROVED MIT	<i>[Signature]</i>	20 JAN 65	CODE IDENT NO.	SIZE	DRAWING NO.
APPROVED MSC	<i>[Signature]</i>	DATE	80230	C	2010065
		SCALE	SHEET OF		

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REVISIONS 15726					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE
A		REVISED PER TDRR 18093	TAN	CDP	8 APR 65
B		REVISED PER TDRR 20674	TAN	CDP	10 JUL 65



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R 1	1006760 - 52	RESISTOR	6.8K	$\pm 2\%$	1/2 W
R 2	1010826 - 237	RESISTOR	287	$\pm 1\%$	15 W
R 3	1006750 - 32	RESISTOR	1000	$\pm 2\%$	1/4 W
R 4	1006750 - 56	RESISTOR	10K	$\pm 2\%$	1/4 W
Q 1	1010269 - 4	TRANSISTOR	2N2151		
Q 2	1010273 - 4	TRANSISTOR	2N1724A		

REF DWG:
TEMPERATURE CONTROL MODULE ASSY
DWG NO. 2007064

NOTES :

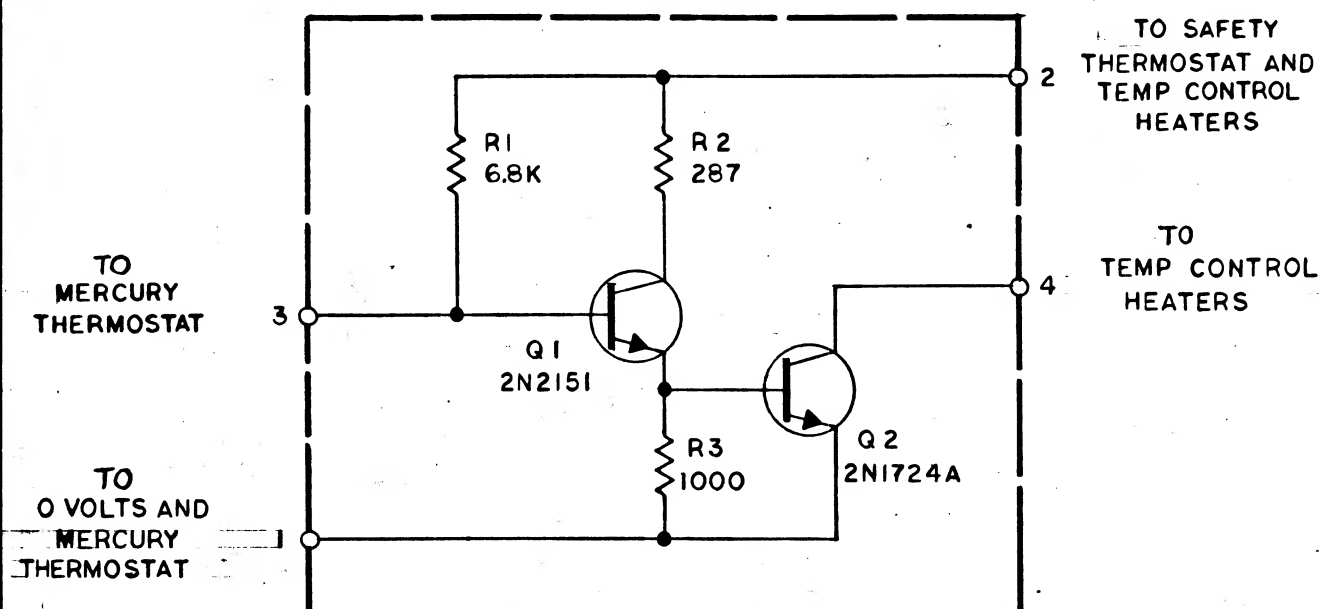
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ f RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES \pm — \pm — \pm — DO NOT SCALE THIS DRAWING
		MATERIAL
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.			
LIST OF MATERIALS							
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS					
DRAWN <i>A. D. Leo</i> 21 DEC 64		SCHEMATIC, TEMPERATURE CONTROL MODULE					
CHECKED <i>A. D. Leo</i> 28 DEC 64							
APPROVED <i>A. D. Leo</i> 20 JAN 65							
APPROVED <i>A. D. Leo</i> 1-20-65							
APPROVED MIT <i>W. E. Taylor</i> 26 MAR 65		CODE IDENT NO.	SIZE	DRAWING NO.			
APPROVED MSC <i>A. C. Smith</i> 1/24/65		80230	C	2010065			
		DATE	SCALE	SHEET 1 OF 1			

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REVISIONS 15726					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R 1	1006760 - 52	RESISTOR	6.8K	± 2 %	1/2 W
R 2	1010826 - 237	RESISTOR	287	± 1 %	15 W
R 3	1006750 - 32	RESISTOR	1000	± 2 %	1/4 W
Q 1	1010269 - 4	TRANSISTOR	2N2151		
Q 2	1010273 - 4	TRANSISTOR	2N1724A		

REF DWG:
TEMPERATURE CONTROL MODULE ASSY
DWG NO. 2007064

NOTES :

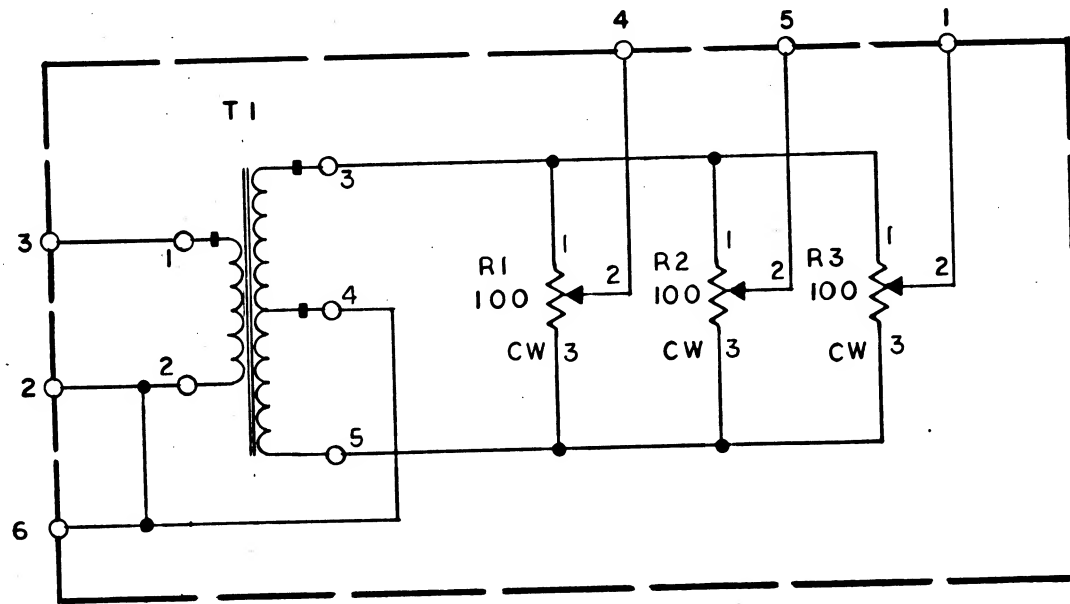
- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MASTER

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ f RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES ± — ± — ± — DO NOT SCALE THIS DRAWING
		MATERIAL
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>A. Di Leo</i>	21 DEC 64	SCHEMATIC, TEMPERATURE CONTROL MODULE		
CHECKED <i>A. Di Leo</i>	23 DEC 64			
APPROVED <i>Ben The...</i>	20 JAN 65			
APPROVED <i>A. C. Smith</i>	1-20-65			
APPROVED MIT <i>W. K. ...</i>	10 JAN 65	CODE IDENT NO.	SIZE	DRAWING NO.
APPROVED MSC <i>A. C. Smith</i>	1/24/65		C	2010065
	DATE	SCALE		SHEET 1 OF 1

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REVISIONS 16822					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE
A		REVISED PER TDRR 17982	R.H.R.	W.K.	5/1/65

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R 1	1010469 - 2	RESISTOR, VAR	100	$\pm 10\%$	1.5 W
R 2	1010469 - 2	RESISTOR, VAR	100	$\pm 10\%$	1.5 W
R 3	1010469 - 2	RESISTOR, VAR	100	$\pm 10\%$	1.5 W
T 1	1010333	TRANSFORMER			

REF DWG:
PRECISION RESOLVER ALIGNMENT ASSY
DWG NO. 2007001

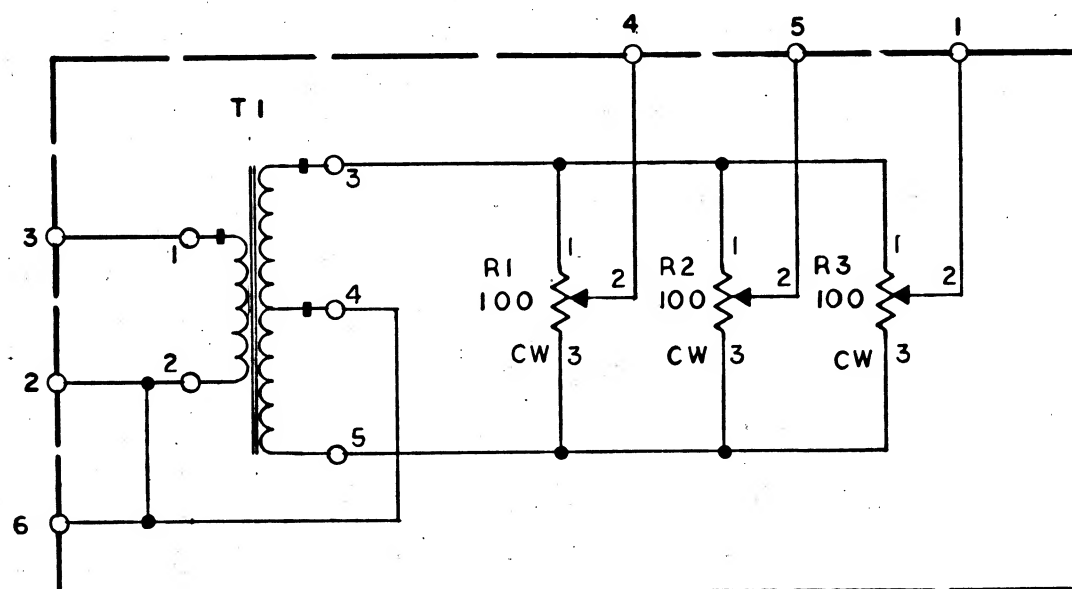
NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
PRESCRIBED BY MIL-D-70327

MASTER

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ f RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES \pm \pm \pm DO NOT SCALE THIS DRAWING
		MATERIAL
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN A. D. Leo CHECKED A. Lindstrom APPROVED J. J. Tension APPROVED		SCHEMATIC, PRECISION RESOLVER ALIGNMENT		
APPROVED M.I.T. APPROVED MSC		CODE IDENT NO. 80230	SIZE C	DRAWING NO. 2010066
DATE 2/24/65		SCALE	SHEET 1 OF 1	

REVISIONS 16822						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R 1	1010360 - 2	RESISTOR,VAR	100	±10%	1.5 W
R'2	1010360 - 2	RESISTOR,VAR	100	±10%	1.5 W
R 3	1010360 - 2	RESISTOR,VAR	100	±10%	1.5 W
T 1	1010333	TRANSFORMER			

NOTES:

~~1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
PRESCRIBED BY MIL-D-70327~~

NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ——— ± ——— ± ———
DO NOT SCALE THIS DRAWING

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIN NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>A. Di Leo</i>	22 DEC 64	SCHEMATIC, PRECISION RESOLVER ALIGNMENT		
CHECKED <i>A. Lindstrom</i>	22 DEC 64			
APPROVED <i>R. J. Dunsen</i>	2-24-65			
APPROVED _____				
APPROVED MIT <i>W. Rye for</i>	24 FEB 65	CODE IDENT NO.	SIZE	DRAWING NO.
		_____	C	2010066
APPROVED MSC <i>A. White</i>	2/26/65	DATE	SCALE	SHEET OF

MACTE

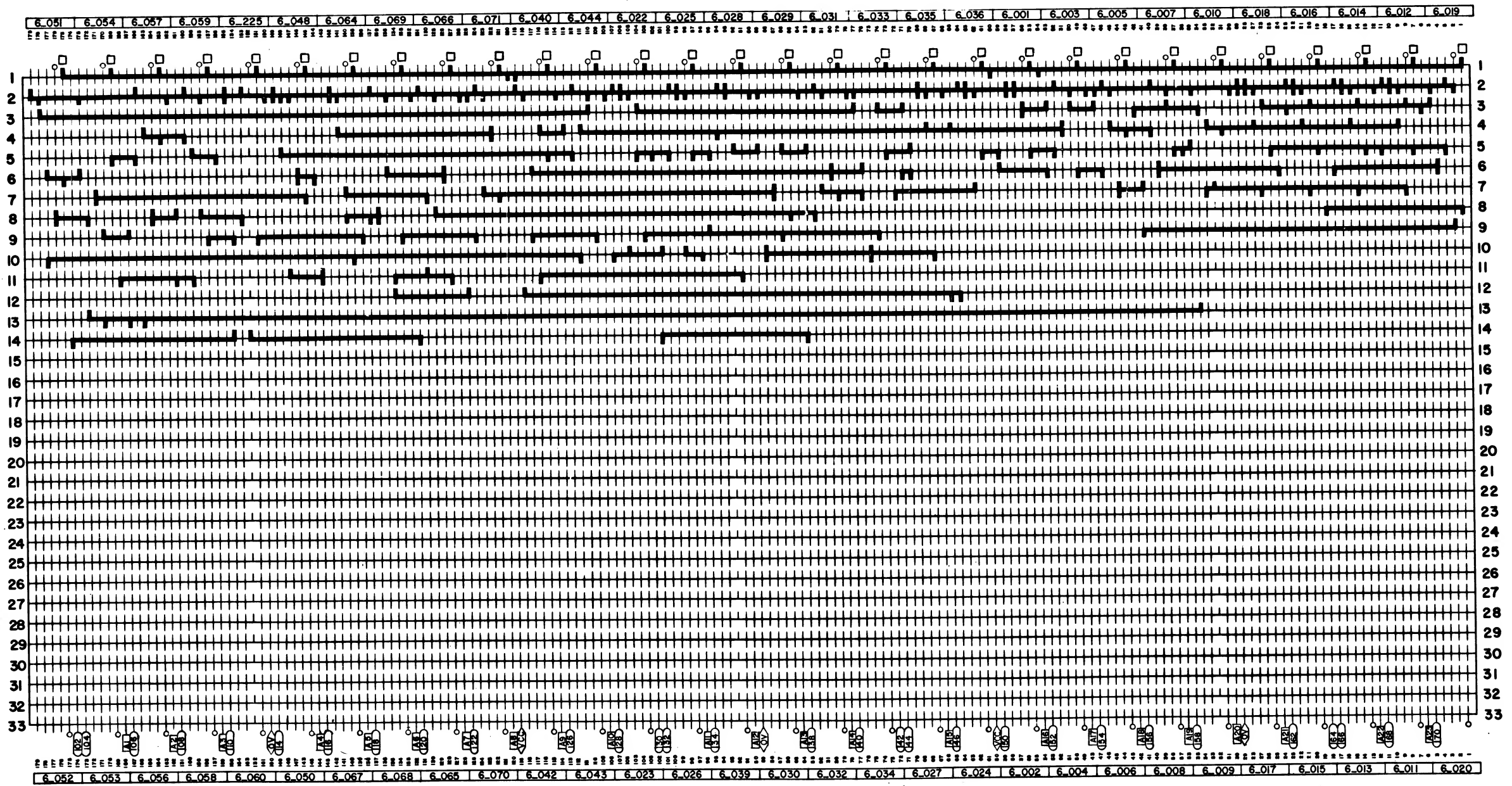


QUADRANT * I

QTY REQD		PART OR IDENTIFYING NO.		MATERIAL OR NOTES		NOMENCLATURE OR DESCRIPTION		FIG. NO.	
LIST OF MATERIALS									
511 T INSTRUMENTATION LAB CAMP-DOE HALL				MANNED SPACECRAFT CENTER HUNTER, TEXAS					
DRAWN BY <i>W. J. H. J.</i> <i>3/1/64</i> CHECKED <i>W. J. H. J.</i> <i>3/1/64</i> APPROVED <i>W. J. H. J.</i> <i>3/1/64</i> APPROVED <i>W. J. H. J.</i> <i>3/1/64</i> DO NOT SCALE THIS DRAWING				SIGNAL WIRING DIAGRAM ERROR ANGLE CTR & LOGIC MODULE					
MATERIAL +				CODE IDENT NO. 511 <i>W. J. H. J.</i> <i>3/1/64</i> 511 <i>W. J. H. J.</i> <i>3/1/64</i>		SIZE 4 E		DRAWING NO. 2101067	
NEXT ASSY		USED ON		APPLICATOR		SCALE		SHEET 1 OF 1	

1. ALL DIMENSIONS ARE IN INCHES
2. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED
3. DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED
4. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED
5. DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED
6. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED
7. DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED
8. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED
9. DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED
10. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED
11. DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED
12. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED
13. DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED
14. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED
15. DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED
16. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED
17. DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED
18. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED
19. DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED
20. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED
21. DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED
22. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED
23. DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED
24. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED
25. DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED
26. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED
27. DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED
28. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED
29. DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED
30. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED
31. DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED
32. DIMENSIONS ARE TO CENTER UNLESS OTHERWISE SPECIFIED
33. DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED

REV	DATE	DESCRIPTION	BY	CHKD	DATE	APPROVED
A		REVISED PER TORR 1/4/71				



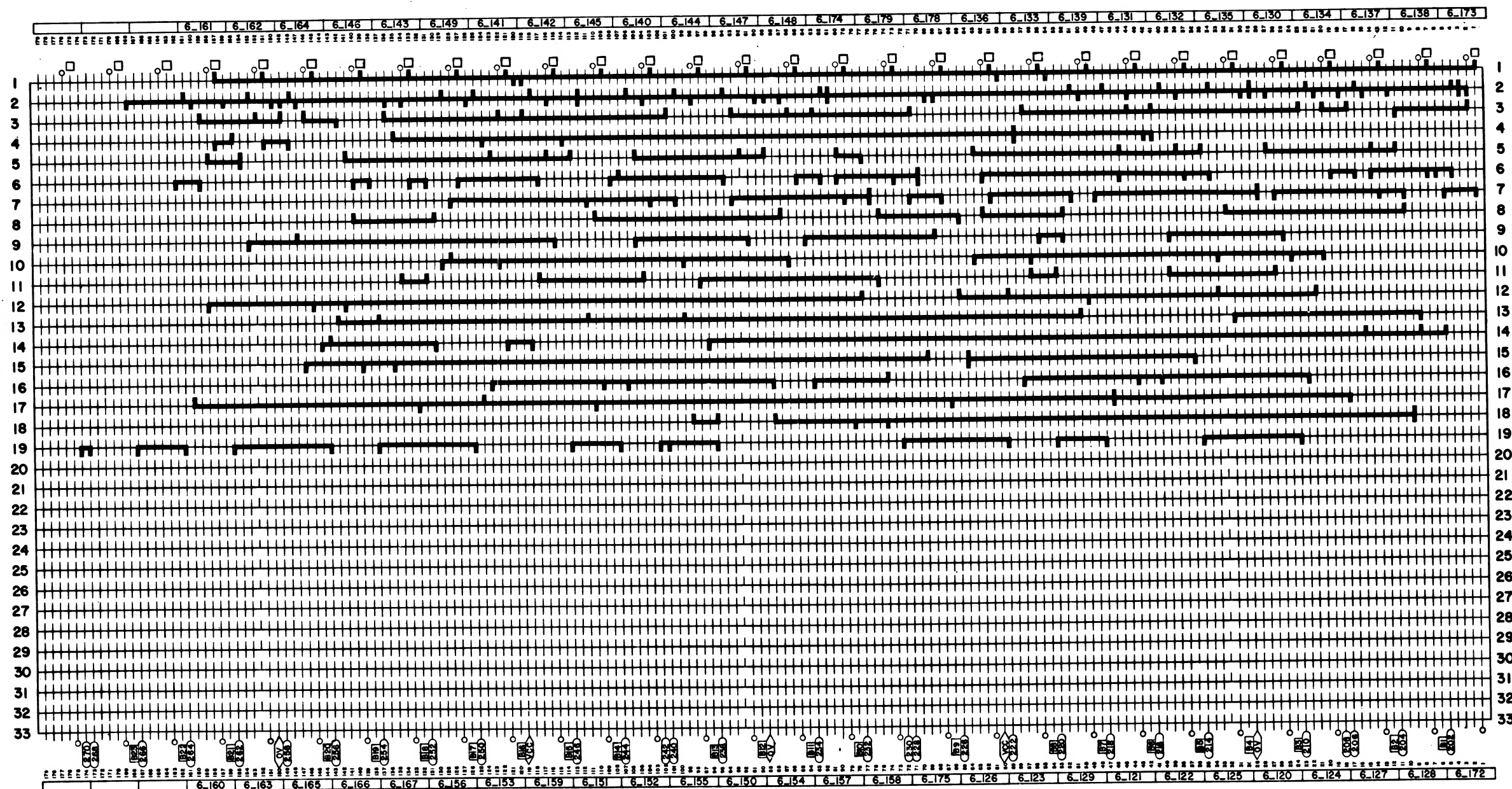
QUADRANT * 2

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	PRD NO.
<p>MIT INSTRUMENTATION LAB CAMBRIDGE MASS</p> <p>MANNNED SPACECRAFT CENTER HOUSTON, TEXAS</p> <p>SIGNAL WIRING DIAGRAM</p> <p>ERROR ANGLE CTR & LOGIC MODULE</p> <p>DRWNG: <i>[Signature]</i> CHECKED: <i>[Signature]</i> APPROVED: <i>[Signature]</i> DATE: <i>[Date]</i></p> <p>MIT APPROVED: <i>[Signature]</i> DATE: <i>[Date]</i></p> <p>CODE IDENT NO. <i>[Number]</i> E 2010067</p> <p>SCALE: <i>[Scale]</i></p> <p>APPLICATION: <i>[Application]</i></p>				

MASTER

STANDARD SYMBOLS FOR ELECTRICAL SYMBOLS
SEE DRAWING 6-100 FOR COMPLETE LIST

REVISIONS				
NO.	DATE	DESCRIPTION	BY	APPROVED
1	1747	REVISED PER TDNR	WAP	WAP



QUADRANT #3

MASTER

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	PHO NO.
<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μF RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES APPROVED <i>[Signature]</i> <i>[Signature]</i> <i>[Signature]</i> DO NOT SCALE THIS DRAWING</p>				
<p>MIT INSTRUMENTATION LAB CAMBRIDGE, MASS</p>				
<p>MANHATTAN SPACECRAFT CENTER HOUSTON, TEXAS</p>				
<p>SIGNAL WIRING DIAGRAM</p>				
<p>ERROR ANGLE CTR & LOGIC MODULE</p>				
APPROVED MIT	APPROVED WAP	CODE IDENT NO.	SIZE	DRAWING NO.
APPROVED WAP	APPROVED WAP	2010067	E	2010067
APPLICATION	USED ON	SCALE	NONE	SHEET 3 OF 4

NOTICE: When obtaining drawings, specifications, or other data are used for any purpose other than in connection with a specifically related government procurement operation, the United States Government assumes no responsibility for the use of such data. It is noted and the fact that the government may have formulated drawings, or so act but supplied the said drawings, specifications, or other data is not to be regarded as implication or otherwise as to any manner in which the drawings or any other person or organization, or company, may use such data or procurements to manufacture any, or sell any improved invention that may or may not be related thereto.



PROCESSES

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIG NO
	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ F RESISTOR VALUES ARE IN OHMS TOLERANCES OR FRACTIONS DECIMALS ANGLES IN $^{\circ}$ $'$ $''$ $'''$ $''''$ $''''''$ DO NOT SCALE THIS DRAWING MATERIAL	M I T INSTRUMENTATION CAMPSIDE HALL	LIST OF MATERIALS MANNED SPACECRAFT CENTER HUNTSVILLE, TENNESSEE	
		DRAWN: <i>W. J. R. / 10/1/54</i>	<div style="text-align: center;"> <h1>SIGNAL WIRING DIAGRAM</h1> <h2>ERROR ANGLE CTR & LOGIC MODULE</h2> </div>	
		CHECKED: <i>W. J. R. / 10/1/54</i>		
		APPROVED: <i>W. J. R. / 10/1/54</i>		
		APPROVED: <i>W. J. R. / 10/1/54</i>		CODE IDENT NO. <i>2101067</i> DRAWING NO. <div style="display: flex; justify-content: space-between; align-items: center;"> NEXT ASBY USED ON APPLY </div>
		APPROVED: <i>W. J. R. / 10/1/54</i>	SCALE <i>1" = 1"</i>	SCALE <i>1" = 1"</i>

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

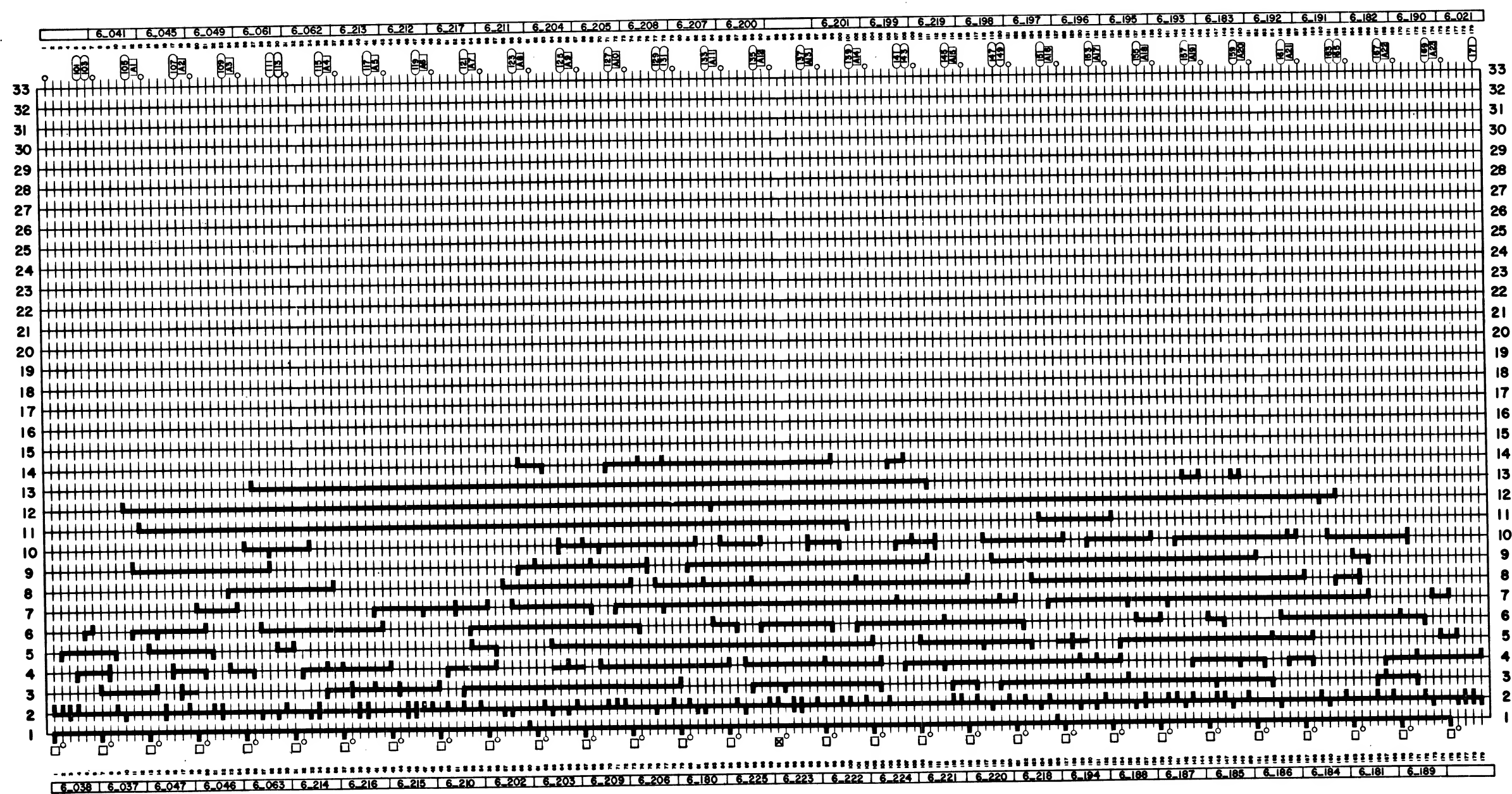
- NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. ☐ DENOTES PIN 10 OF DUAL NOR GATE
 3. ☐ DENOTES OUTPUTS (PINS 1 & 9) OF DUAL NOR GATES
 4. ☐ DENOTES INTER-QUADRANT CONNECTION WITHIN MODULE
 5. ☒ DENOTES MODULE PIN NUMBER
 6. ☒ DENOTES NOR GATE NUMBER
 7. ☒ REPRESENTS CONNECTION TO OVDC SIGNAL
 8. ☒ REPRESENTS CONNECTION TO POWER
 9. ☒ DENOTES FAN-IN GATES

QUADRANT #1

MASTER

REF DWG: SCHEMATIC 2010048

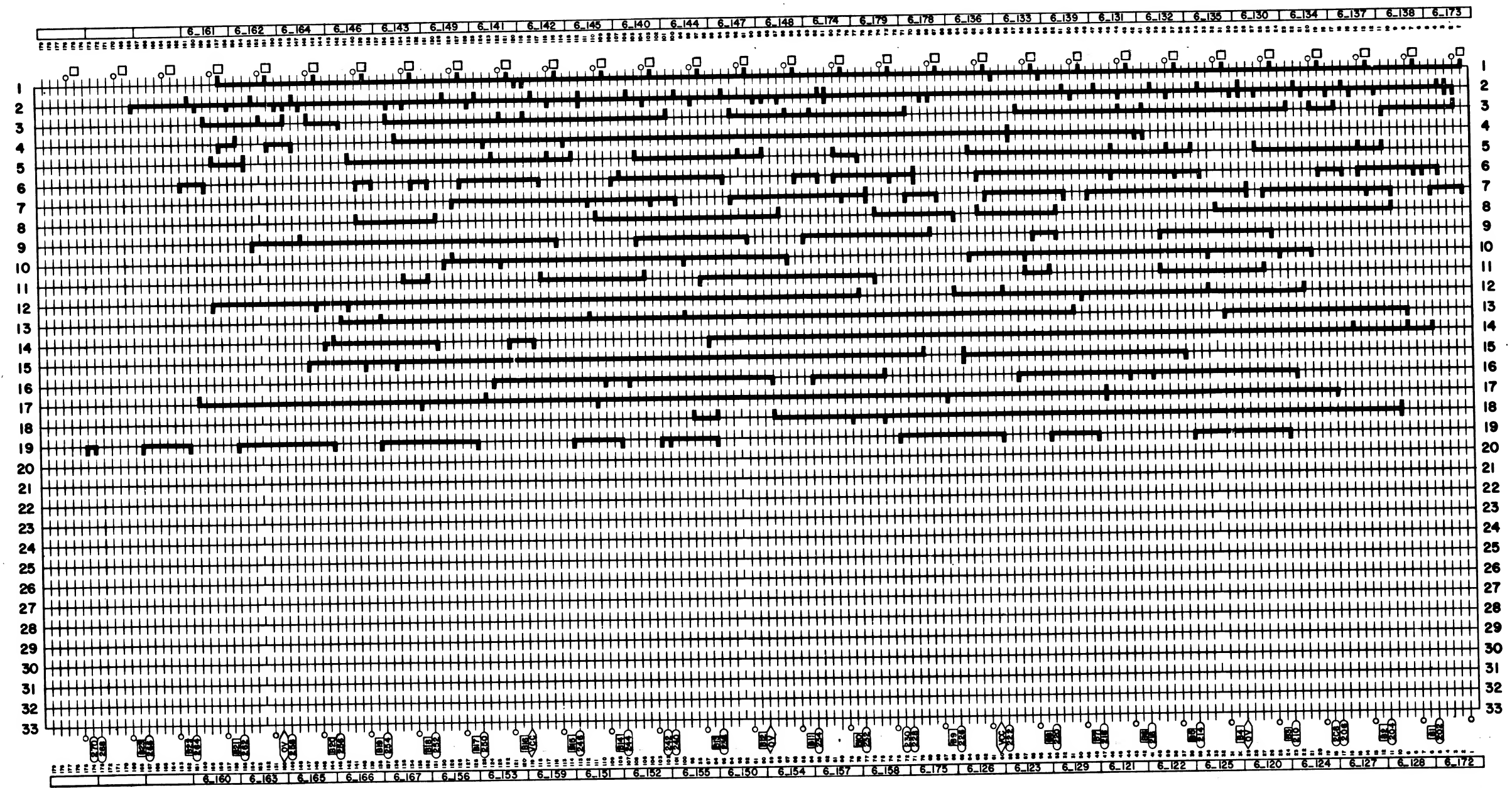
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LIST OF MATERIAL				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.			MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN: <i>[Signature]</i> CHECKED: <i>[Signature]</i>				
APPROVED: <i>[Signature]</i> DATE: <i>[Date]</i>				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES DO NOT SCALE THIS DRAWING				
MATERIAL				
NEXT ASSY USED ON APPLICATION				
APPROVED: <i>[Signature]</i> DATE: <i>[Date]</i>			CORE SECT NO. <i>[Number]</i> SEE <i>[Number]</i>	
APPROVED: <i>[Signature]</i> DATE: <i>[Date]</i>			SCALE: NONE	
DRAWING NO. 2010067			SHEET 1 OF 4	



[illegible]

REVISIONS

NO.	DATE	DESCRIPTION
1	11/11/67	11/11/67

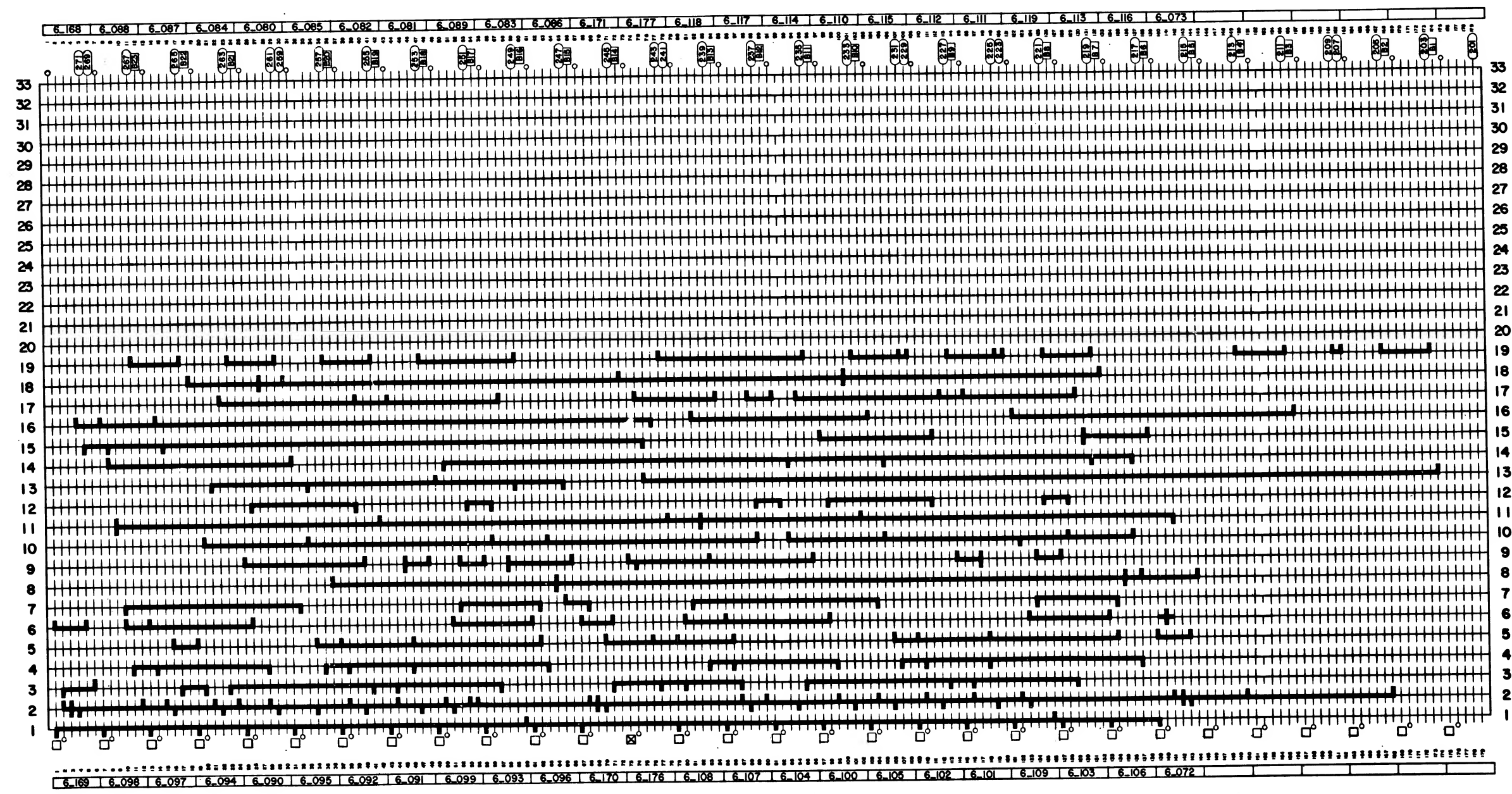


QUADRANT #3

CITY		PART OR IDENTIFYING NO.		MATERIAL		NOMENCLATURE OR DESCRIPTION		PND NO.	
MIT		INSTRUMENTATION LAB		CAMBRIDGE, MASS.		LIST OF MATERIALS		MANNED SPACECRAFT CENTER	
DRAWN		CHECKED		APPROVED		DATE		DRAWING NO.	
2/1/68		2/1/68		2/1/68		2/1/68		2010067	
NEXT APPY		USED ON		APPLICATION		SCALE		NONE	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μ F
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ - 10% 1% 10' 10"
DO NOT SCALE THIS DRAWING

REVISIONS				
NO.	DATE	DESCRIPTION	BY	APP.
1	10/1/67			



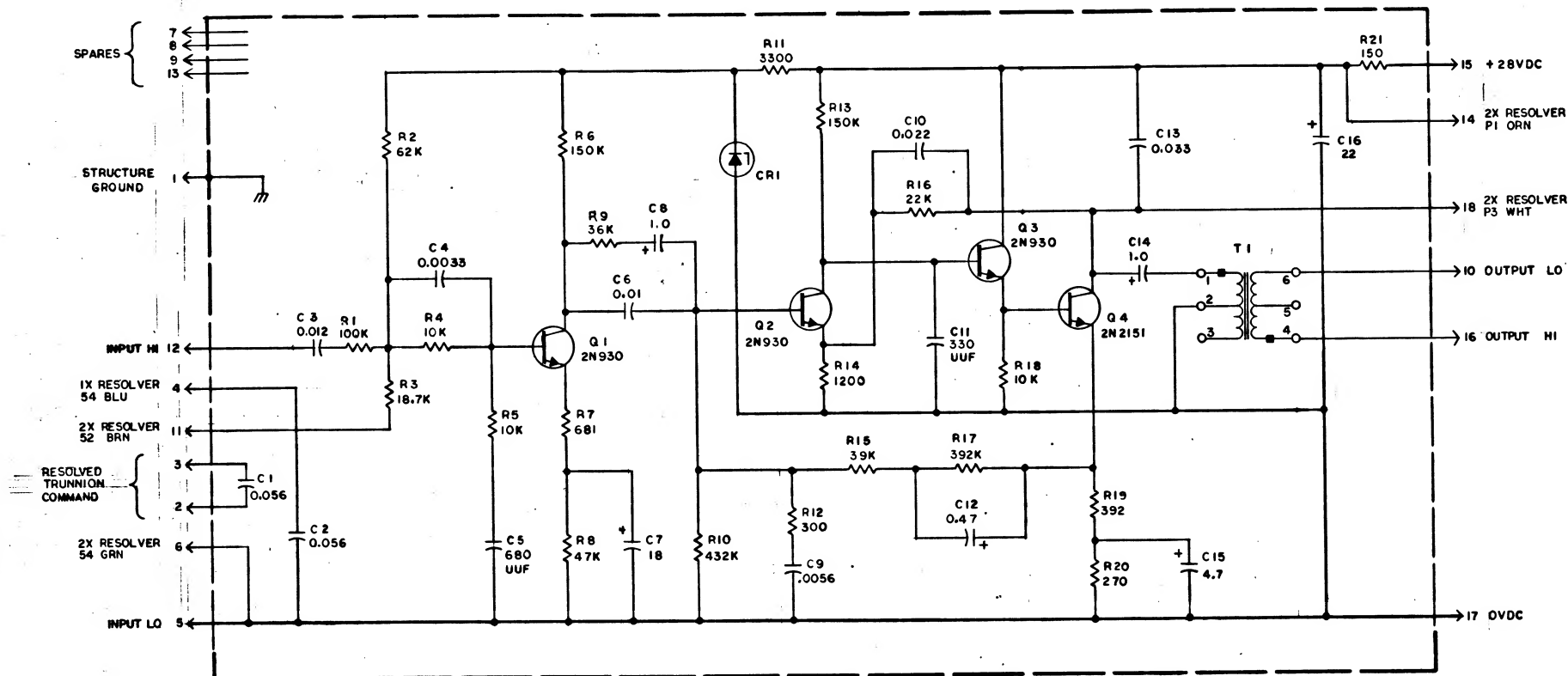
QUADRANT #4

MASTER

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIG. NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
SIGNAL WIRING DIAGRAM				
ERROR ANGLE CTR & LOGIC MODULE				
DRAWN BY: <i>[Signature]</i>		CHECKED BY: <i>[Signature]</i>		
APPROVED BY: <i>[Signature]</i>		APPROVED BY: <i>[Signature]</i>		
MIT		CODE IDENT NO. 2010067		
NEXT APPY		SCALE NONE		
USED ON		SHEET 4 OF 4		
APPLICATION				

REVISIONS

REV	DATE	DESCRIPTION	BY	CHK	DATE	APPROVED
A		REVISED PER TDR 18793				



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-80	RESISTOR	100 K	±2%	1/4 W
R2	1006750-75		62 K	±2%	1/4 W
R3	1010364-495		18.7 K	±1%	1/8 W
R4	1006750-56		10 K	±2%	1/4 W
R5	1006750-56		10 K	±2%	1/4 W
R6	1006750-84		150 K	±2%	1/4 W
R7	1010364-219		6.81	±1%	1/8 W
R8	1006750-72		47 K	±2%	1/4 W
R9	1006750-69		36 K	±2%	1/4 W
R10	1010364-757		432 K	±1%	1/8 W
R11	1006750-44		3300	±2%	1/4 W
R12	-19		300		
R13	-84		150 K		
R14	-34		1200		
R15	-70		39 K	±2%	1/4 W
R16	1006750-64		22 K	±2%	1/4 W
R17	1010364-749		392 K	±1%	1/8 W
R18	1006750-56		10 K	±2%	1/4 W
R19	1010364-173		392	±1%	1/8 W
R20	1006750-18		270	±2%	1/4 W
R21	1006750-12	RESISTOR	150	±2%	1/4 W
C1	1010264-22	CAPACITOR	0.056	±5%	200VDC
C2	1010264-22		0.056	±5%	200
C3	1010264-14		0.012	±5%	200
C4	1010375-44		0.0033	±10%	100
C5	1010359-15		680UUF		200
C6	1010375-50		0.01		100
C7	1006755-20		18		15
C8	1006755-69		1.0		35
C9	1010375-47		0.0056		100
C10	1010375-54		0.022		100
C11	1010359-11		330UUF		200
C12	1006755-65		0.47		35
C13	1010375-56		0.033		100
C14	1006755-69		1.0		35
C15	1006755-77		4.7		35
C16	1006755-85	CAPACITOR	22	±10%	35VDC
CR1	1010372-24	DIODE			
Q1	1010397-1	TRANSISTOR	2N930		
Q2	1010397-1	TRANSISTOR	2N930		
Q3	1010397-1	TRANSISTOR	2N930		
Q4	1010269-1	TRANSISTOR	2N2151		
T1	1010910	TRANSFORMER			

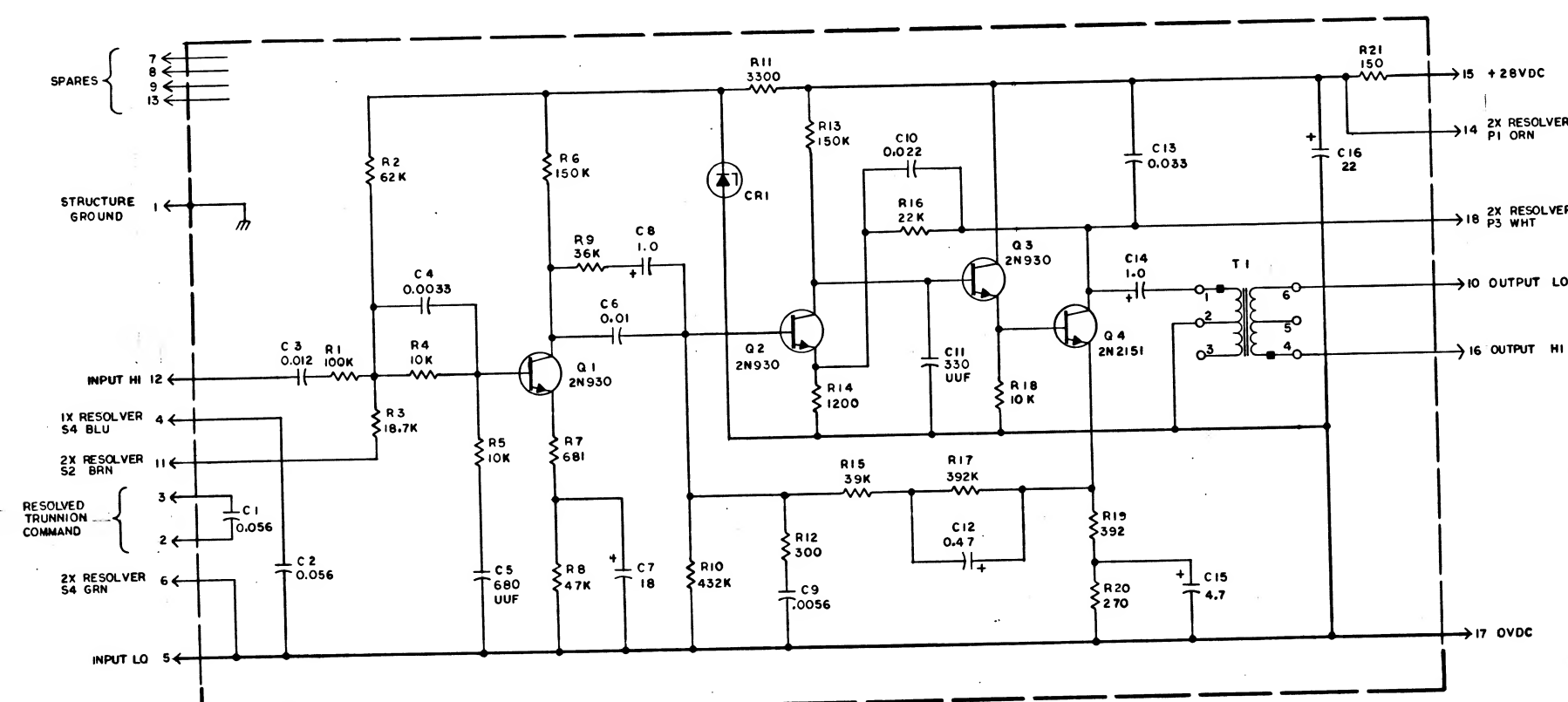
NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
PRESCRIBED BY MIL-D-70327

REF DWG:
COSECANT GENERATOR ASSY
DWG NO: 2007122

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIG NO.
LIST OF MATERIALS				
MATERIAL		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
MATERIAL		SCHEMATIC. COSECANT GENERATOR		
MATERIAL		DRAWING NO. 2010068		
MATERIAL		SIZE E		
MATERIAL		SCALE		
MATERIAL		SHEET 1 OF 1		

12010068 1A

REVISIONS					
REV	DATE	DESCRIPTION	BY	CHK	APP
A	18793	REVISED PER TDRR 18793	WJ	WJ	WJ
B	20780	REVISED PER TDRR 20780	WJ	WJ	WJ



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-80	RESISTOR	100 K	±2%	1/4 W
R2	1006750-75		62 K	±2%	1/4 W
R3	1010364-495		18.7K	±2%	1/8 W
R4	1006750-56		10 K	±2%	1/4 W
R5	1006750-56		10 K	±2%	1/4 W
R6	1006750-84		150K	±2%	1/4 W
R7	1010364-219		681	±1%	1/8 W
R8	1006750-72		47K	±2%	1/4 W
R9	1006750-69		36K	±2%	1/4 W
R10	1010364-757		432K	±1%	1/8 W
R11	1006750-44		3300	±2%	1/4 W
R12	-19		300		
R13	-84		150K		
R14	-34		1200		
R15	-70		39 K		
R16	1006750-64		22K	±2%	1/4 W
R17	1010364-749		392K	±1%	1/8 W
R18	1006750-56		10K	±2%	1/4 W
R19	1010364-173		392	±1%	1/8 W
R20	1006750-18		270	±2%	1/4 W
R21	1006750-12	RESISTOR	150	±2%	1/4 W
C1	1010264-22	CAPACITOR	0.056	±5%	200VDC
C2	1010264-22		0.056	±5%	200
C3	1010264-14		0.012	±5%	200
C4	1010375-44		0.0033	±10%	100
C5	1010359-15		680UUF		200
C6	1010375-50		0.01		100
C7	1006755-20		18		35
C8	1006755-69		1.0		100
C9	1010375-47		0.0056		100
C10	1010375-54		0.022		100
C11	1010359-11		330UUF		200
C12	1006755-65		0.47		35
C13	1010375-56		0.033		100
C14	1006755-69		1.0		35
C15	1006755-77		4.7		35
C16	1006755-85	CAPACITOR	22	±10%	35VDC
CR1	1010372-24	DIODE			
Q1	1010397-1	TRANSISTOR	2N930		
Q2	1010397-1	TRANSISTOR	2N930		
Q3	1010397-1	TRANSISTOR	2N930		
Q4	1010269-1	TRANSISTOR	2N2151		
T1	1010910	TRANSFORMER			

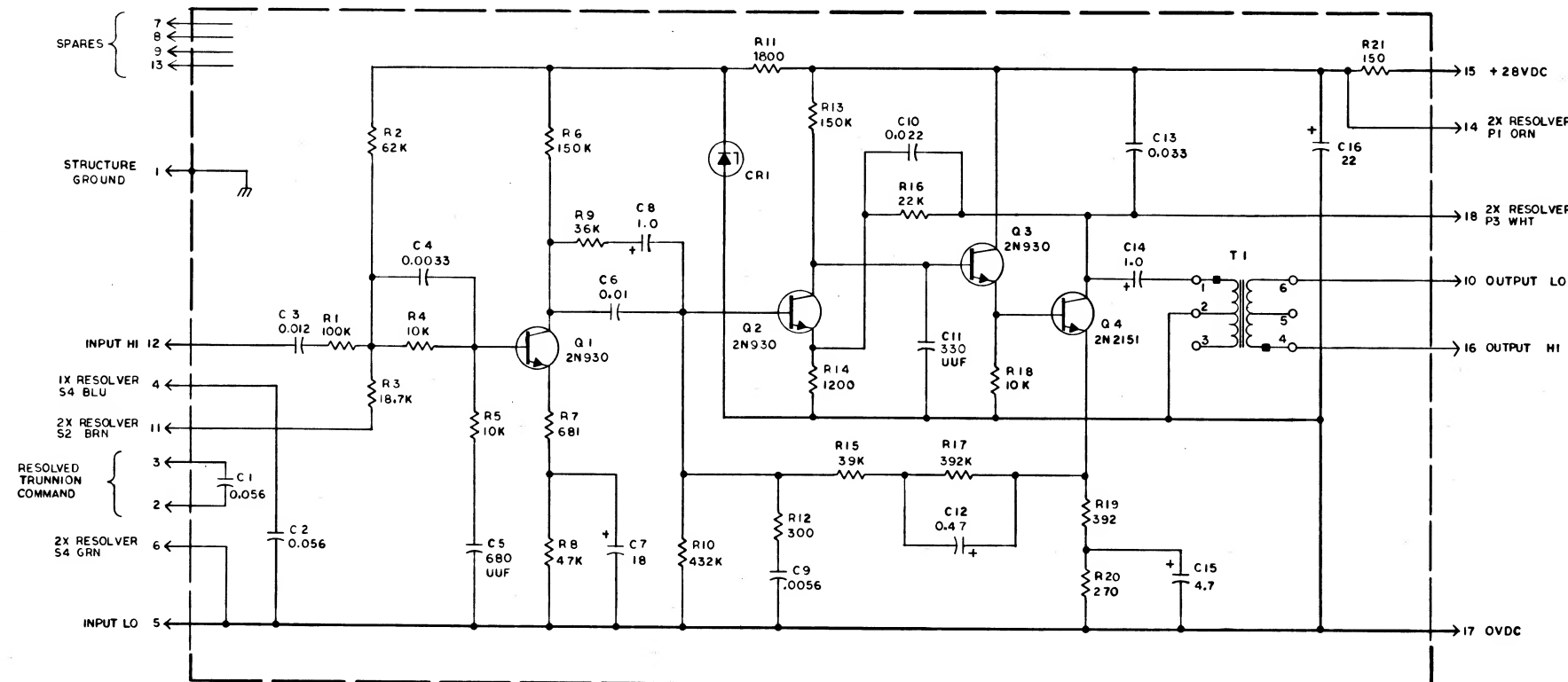
NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
PRESCRIBED BY MIL-D-70317

REF DWG:
COSECANT GENERATOR ASSY
DWG NO: 2007122

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIG NO.
<div style="display: flex; justify-content: space-between;"> <div> <p>MIT INSTRUMENTATION LAB CAMBRIDGE, MASS</p> <p>DRAWN <i>[Signature]</i> <i>[Date]</i></p> <p>CHECKED <i>[Signature]</i> <i>[Date]</i></p> <p>APPROVED <i>[Signature]</i> <i>[Date]</i></p> </div> <div> <p>MANNED SPACECRAFT CENTER HOUSTON, TEXAS</p> <p>SCHEMATIC, COSECANT GENERATOR</p> <p>CODE IDENT NO. 80230</p> <p>DATE <i>[Date]</i> SCALE <i>[Scale]</i> SHEET 1 OF 1</p> </div> </div>				

REVISIONS

REV	DATE	DESCRIPTION
A	10/1/73	REVISED PER TDRR 18793
B	10/1/73	REVISED PER TDRR 20780
C	10/1/73	REVISED PER TDRR 26032



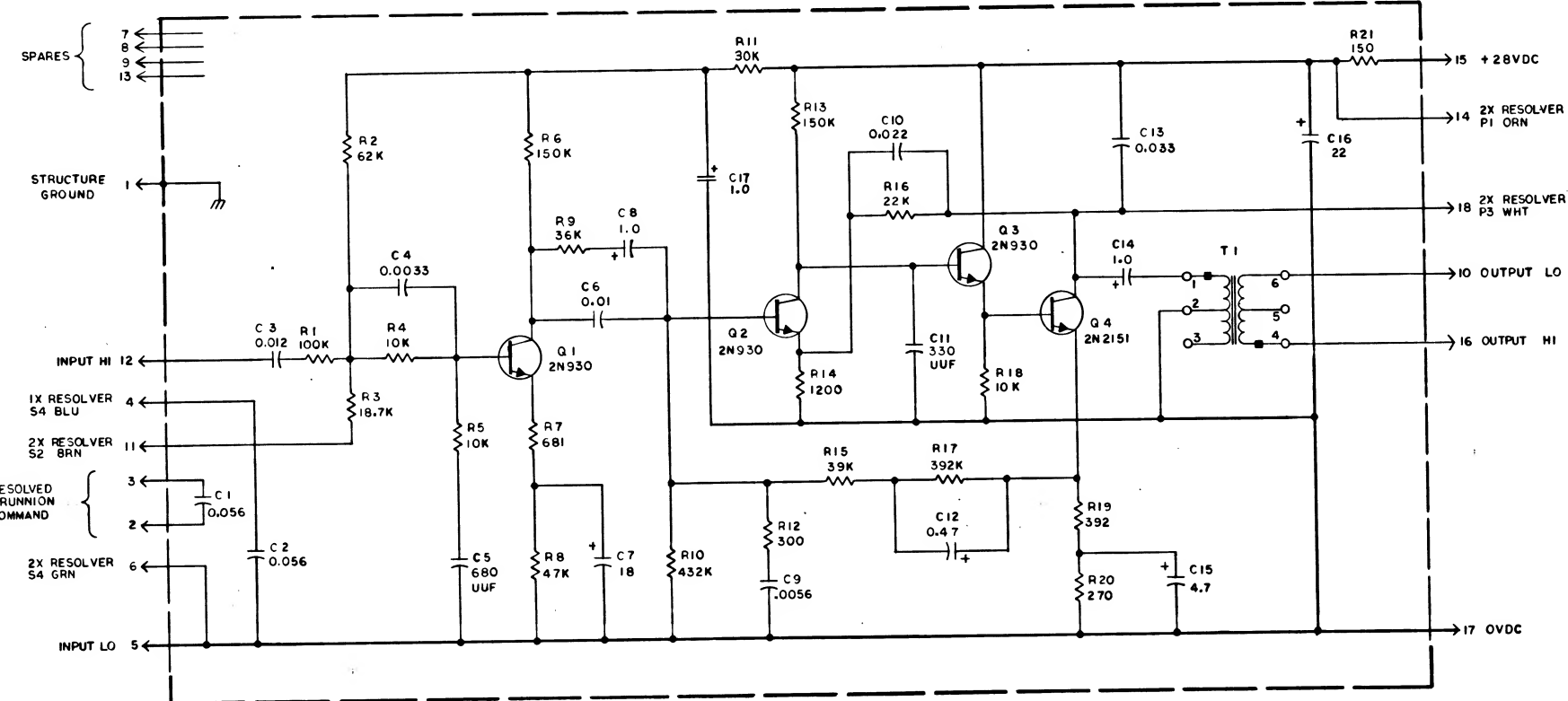
REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-80	RESISTOR	100K	±2%	1/4 W
R2	1006750-75	RESISTOR	62K	±2%	1/4 W
R3	1010364-495	RESISTOR	18.7K	±1%	1/8 W
R4	1006750-56	RESISTOR	10K	±2%	1/4 W
R5	1006750-56	RESISTOR	10K	±2%	1/4 W
R6	1006750-84	RESISTOR	150K	±2%	1/4 W
R7	1010364-219	RESISTOR	681	±1%	1/8 W
R8	1006750-72	RESISTOR	47K	±2%	1/4 W
R9	1006750-69	RESISTOR	36K	±2%	1/4 W
R10	1010364-757	RESISTOR	432K	±1%	1/8 W
R11	1006750-38	RESISTOR	1800	±2%	1/4 W
R12	-19	RESISTOR	300	±2%	1/4 W
R13	-84	RESISTOR	150K	±2%	1/4 W
R14	-34	RESISTOR	1200	±2%	1/4 W
R15	-70	RESISTOR	39K	±2%	1/4 W
R16	1006750-64	RESISTOR	22K	±2%	1/4 W
R17	1010364-749	RESISTOR	392K	±1%	1/8 W
R18	1006750-56	RESISTOR	10K	±2%	1/4 W
R19	1010364-173	RESISTOR	392	±1%	1/8 W
R20	1006750-18	RESISTOR	270	±2%	1/4 W
R21	1006750-12	RESISTOR	150	±2%	1/4 W
C1	1010264-22	CAPACITOR	0.056	±5%	200VDC
C2	1010264-22	CAPACITOR	0.056	±5%	200
C3	1010264-14	CAPACITOR	0.012	±5%	200
C4	1010375-44	CAPACITOR	0.0033	±10%	100
C5	1010359-15	CAPACITOR	680UUF	±20%	20
C6	1010375-50	CAPACITOR	0.01	±5%	100
C7	1006755-20	CAPACITOR	18	±5%	15
C8	1006755-69	CAPACITOR	1.0	±5%	35
C9	1010375-47	CAPACITOR	0.0056	±5%	100
C10	1010264-17	CAPACITOR	0.022	±5%	200
C11	1010359-11	CAPACITOR	330UUF	±20%	20
C12	1006755-65	CAPACITOR	0.47	±5%	35
C13	1010375-56	CAPACITOR	0.033	±5%	100
C14	1006755-69	CAPACITOR	1.0	±5%	35
C15	1006755-77	CAPACITOR	4.7	±5%	35
C16	1006755-85	CAPACITOR	22	±10%	35VDC
CR1	1008815-11	DIODE			
Q1	1010397-1	TRANSISTOR	2N930		
Q2	1010397-1	TRANSISTOR	2N930		
Q3	1010397-1	TRANSISTOR	2N930		
Q4	1010269-1	TRANSISTOR	2N2151		
T1	1010910	TRANSFORMER			

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
PRESCRIBED BY MIL-D-70327

REF DWG:
COSECANT GENERATOR ASSY
DWG NO: 2007122

QTY	RECD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	END NO
LIST OF MATERIALS					
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS			MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
SCHEMATIC, COSECANT GENERATOR					
DRAWN: <i>[Signature]</i> CHECKED: <i>[Signature]</i> APPROVED: <i>[Signature]</i>			DRAWING NO: 80230 E 2010068		
NEXT ASSY: <i>[Blank]</i>			DATE: <i>[Blank]</i>		
APPLICATION: <i>[Blank]</i>			SHEET: <i>[Blank]</i> OF: <i>[Blank]</i>		

6



REVISIONS				
REV	DATE	BY	CHK	APPROVED
A				
B				
C				
D				

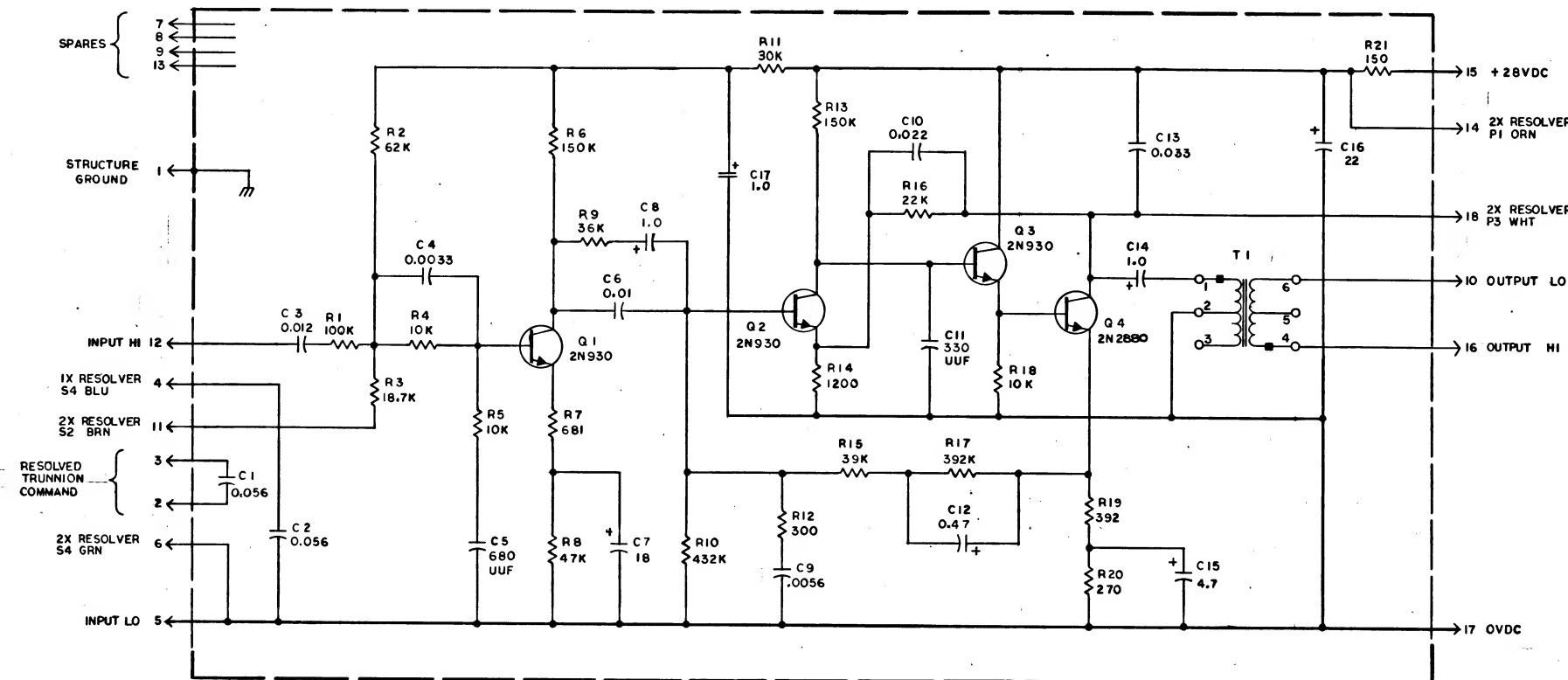
REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-80	RESISTOR	100K	±2%	1/4 W
R2	1006750-75		62K	±2%	1/4 W
R3	1010364-495		18.7K	±1%	1/4 W
R4	1006750-56		10K	±2%	1/4 W
R5	1006750-56		10K	±2%	1/4 W
R6	1006750-84		150K	±2%	1/4 W
R7	1010364-219		681	±1%	1/8 W
R8	1006750-72		47K	±2%	1/4 W
R9	1006750-69		36K	±2%	1/4 W
R10	1010364-57		4.32K	±1%	1/8 W
R11	1006750-67		30K	±2%	1/4 W
R12	-19		300		
R13	-84		150K		
R14	-34		1200		
R15	-70		39K		
R16	1006750-64		22K	±2%	1/4 W
R17	1010364-749		392K	±1%	1/8 W
R18	1006750-56		10K	±2%	1/4 W
R19	1010364-173		392	±1%	1/8 W
R20	1006750-18		270	±2%	1/4 W
R21	1006750-12	RESISTOR	150	±2%	1/4 W
C1	1010264-22	CAPACITOR	0.056	±5%	200VDC
C2	1010264-22		0.056	±5%	200
C3	1010264-14		0.012	±5%	200
C4	1010375-44		0.0033	±10%	100
C5	1010359-15		680UUF		230
C6	1010375-50		0.01		100
C7	1006755-20		18		15
C8	1006755-69		1.0		35
C9	1010375-47		0.0056		100
C10	1010264-17		0.022		200
C11	1010359-11		330UUF		230
C12	1006755-65		0.47		35
C13	1010375-56		0.033		100
C14	1006755-69		1.0		35
C15	1006755-77		4.7		35
C16	1006755-85		22	±10%	35VDC
C17	1006755-69	CAPACITOR	1.0	±10%	35VDC
Q1	1010397-1	TRANSISTOR	2N930		
Q2	1010397-1	TRANSISTOR	2N930		
Q3	1010397-1	TRANSISTOR	2N930		
Q4	1010269-1	TRANSISTOR	2N2151		
T1	1010910	TRANSFORMER			

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
PRESCRIBED BY MIL-D-70327

REF DWG:
COSECANT GENERATOR ASSY
DWG NO. 2007122

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIG NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN: <i>[Signature]</i> CHECKED: <i>[Signature]</i> APPROVED: <i>[Signature]</i>		SCHEMATIC. COSECANT GENERATOR		
APPROVED: <i>[Signature]</i> DATE: <i>[Date]</i>		DRAWING NO. 80230 E 2010068		
APPLICATION		SHEET 1 OF 1		

REVISIONS				
REV	DATE	DESCRIPTION	BY	CHK
A	10/18/64	REVISED PER TDR 18793	WJ	WJ
B	10/20/64	REVISED PER TDR 20780	WJ	WJ
C	10/20/64	REVISED PER TDR 26032	WJ	WJ
D	10/20/64	REVISED PER TDR 29587	WJ	WJ
E	10/20/64	REVISED PER TDR 32504	WJ	WJ



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATN
R1	1006750-80	RESISTOR	100 K	±2%	1/4 W
R2	1006750-75		62 K	±2%	1/4 W
R3	1010364-495		18.7 K	±1%	1/8 W
R4	1006750-56		10 K	±2%	1/4 W
R5	1006750-56		10 K	±2%	1/4 W
R6	1006750-84		150 K	±2%	1/4 W
R7	1010364-219		68 K	±1%	1/8 W
R8	1006750-72		47 K	±2%	1/4 W
R9	1006750-69		36 K	±2%	1/4 W
R10	1010364-757		432 K	±1%	1/8 W
R11	1006750-67		30 K	±2%	1/4 W
R12	-19		300		
R13	-84		150 K		
R14	-34		1200		
R15	-70		39 K		
R16	1006750-64		22 K	±2%	1/4 W
R17	1010364-749		392 K	±1%	1/8 W
R18	1006750-56		10 K	±2%	1/4 W
R19	1010364-173		392	±1%	1/8 W
R20	1006750-18		270	±2%	1/4 W
R21	1006750-12	RESISTOR	150	±2%	1/4 W
C1	1010264-22	CAPACITOR	0.056	±5%	200VDC
C2	1010264-22		0.056	±5%	200
C3	1010264-14		0.012	±5%	200
C4	1010375-44		0.0033	±10%	100
C5	1010359-15		680UUF		200
C6	1010375-50		0.01		100
C7	1006755-20		18		35
C8	1006755-69		1.0		35
C9	1010375-47		0.0056		100
C10	1010264-17		0.022		200
C11	1010359-11		330UUF		200
C12	1006755-65		0.47		35
C13	1010375-36		0.033		100
C14	1006755-69		1.0		35
C15	1006755-77		4.7		35
C16	1006755-85		22	±10%	35VDC
C17	1006755-69	CAPACITOR	1.0	±10%	35VDC
T1	1010910	TRANSFORMER			
Q1	1010397-1	TRANSISTOR	2N930		
Q2	1010397-1	TRANSISTOR	2N930		
Q3	1010397-1	TRANSISTOR	2N930		
Q4	1010843-4	TRANSISTOR	2N2880		

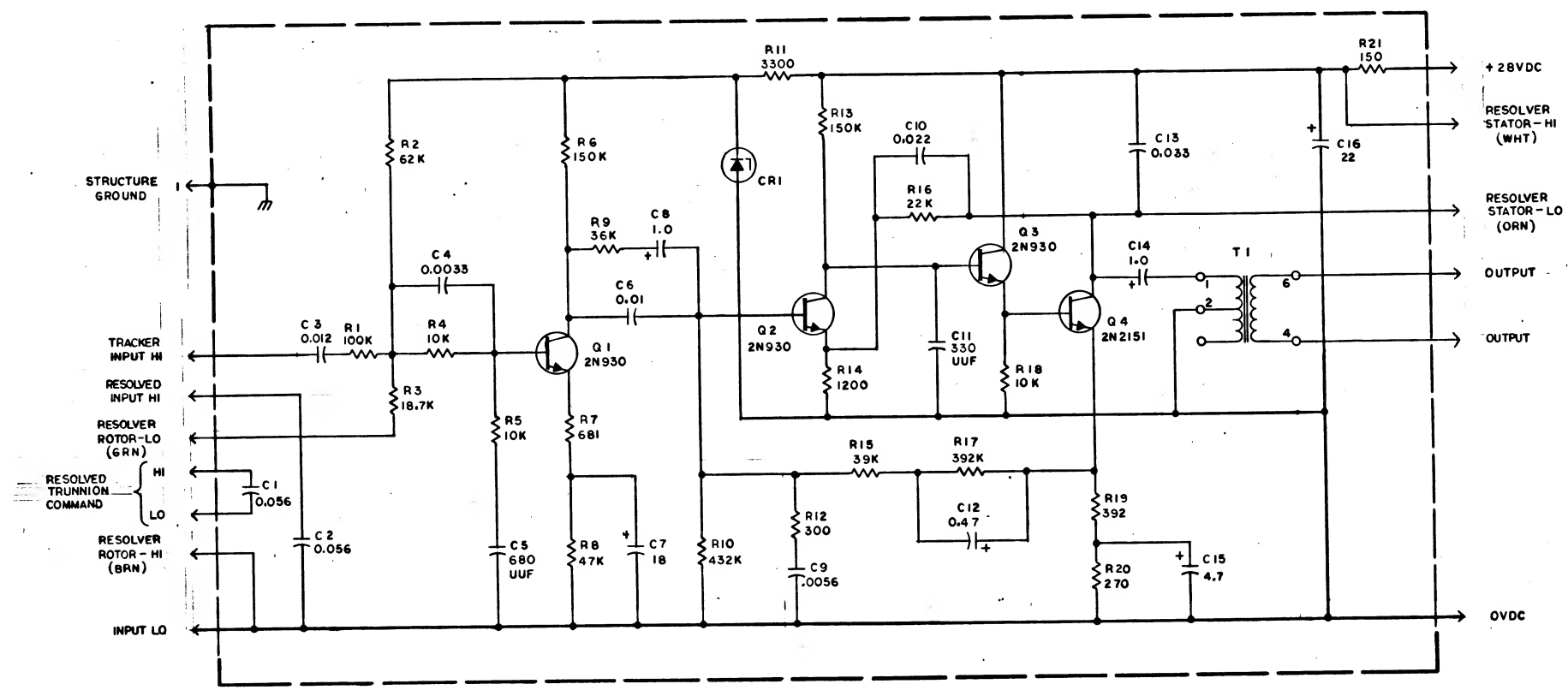
NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
PRESCRIBED BY MIL-D-70327

REF DWG:
COSECANT GENERATOR ASSY
DWG NO: 2007122

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FOUND
LIST OF MATERIALS				
M I T INSTRUMENTATION LAB CAMBRIDGE, MASS.				
MANNED SPACECRAFT CENTER HOUSTON, TEXAS				
SCHEMATIC, COSECANT GENERATOR				
DRAWN <i>[Signature]</i>		CODE IDENT NO. 80230		
CHECKED <i>[Signature]</i>		SIZE E		
APPROVED <i>[Signature]</i>		DRAWING NO. 2010068		
APPROVED <i>[Signature]</i>		DATE 10/20/64		
APPROVED <i>[Signature]</i>		SCALE 1		
APPROVED <i>[Signature]</i>		SHEET 1 OF 1		

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

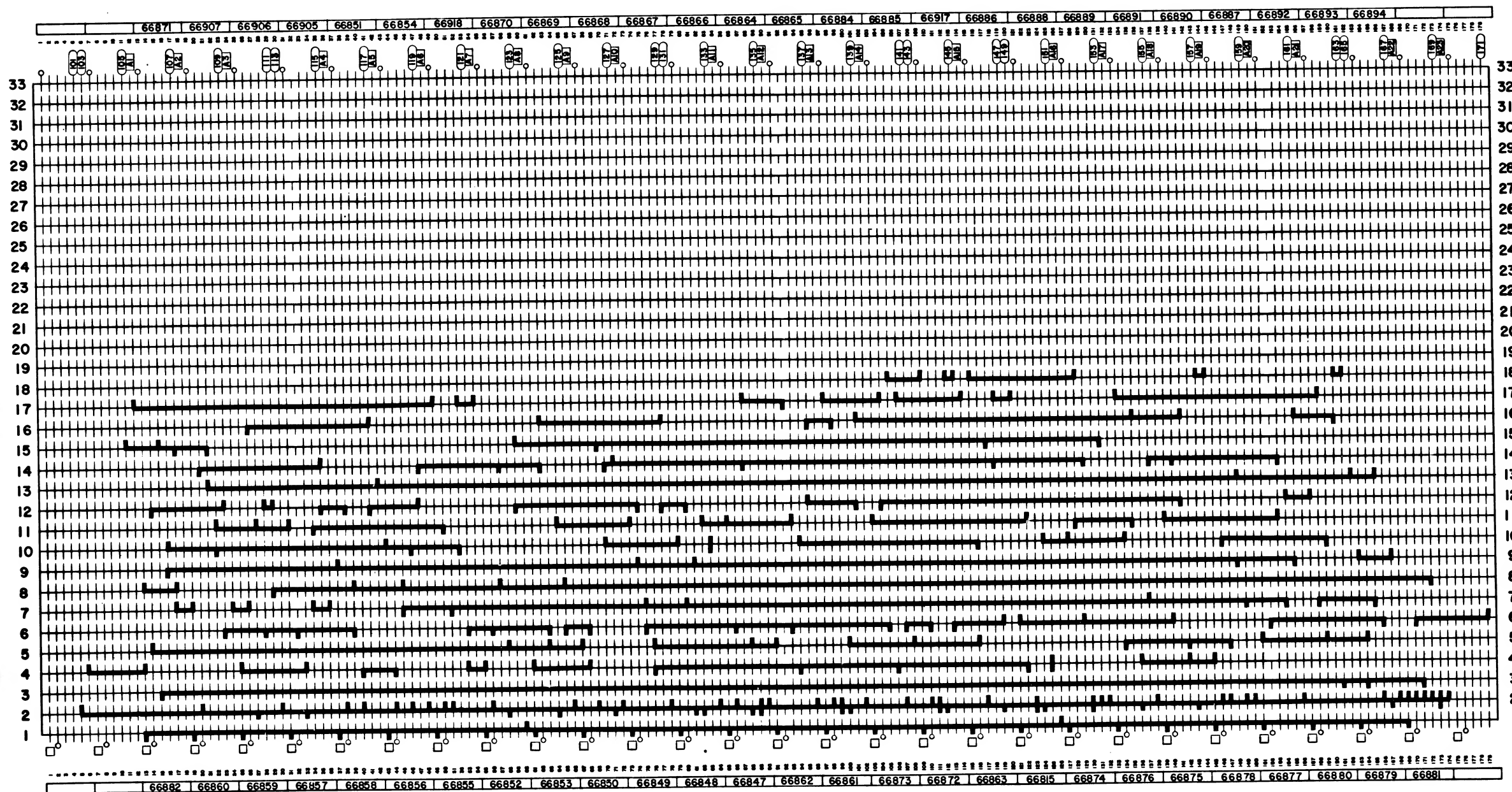


REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATINGS
R1	1006750-80	RESISTOR	100 K	±2 %	1/4 W
R2	1006750-75		62 K	±2 %	1/4 W
R3	1010364-495		18.7 K	±1 %	1/8 W
R4	1006750-56		10 K	±2 %	1/4 W
R5	1006750-56		10 K	±2 %	1/4 W
R6	1006750-84		150 K	±2 %	1/4 W
R7	1010364-219		681	±1 %	1/8 W
R8	1006750-72		47 K	±2 %	1/4 W
R9	1006750-69		36 K	±2 %	1/4 W
R10	1010364-757		432 K	±1 %	1/8 W
R11	1006750-44		3300	±2 %	1/4 W
R12	-19		300		
R13	-84		150 K		
R14	-34		1200		
R15	-70		39 K		
R16	1006750-64		22 K	±2 %	1/4 W
R17	1010364-749		392 K	±1 %	1/4 W
R18	1006750-56		10 K	±2 %	1/4 W
R19	1010364-173		392	±1 %	1/8 W
R20	1006750-18		270	±2 %	1/4 W
R21	1006750-12	RESISTOR	150	±2 %	1/4 W
C1	1010264-22	CAPACITOR	0.056	±5 %	200VDC
C2	1010264-22		0.056	±5 %	200
C3	1010264-14		0.012	±5 %	200
C4	1010375-44		0.0033	±10 %	100
C5	1010359-15		680UUF		200
C6	1010375-50		0.01		100
C7	1006755-20		18		15
C8	1006755-69		1.0		35
C9	1010375-47		0.0056		100
C10	1010375-54		0.022		100
C11	1010359-11		330UUF		200
C12	1006755-55		0.47		35
C13	1010375-56		0.033		100
C14	1006755-69		1.0		35
C15	1006755-77		4.7		35
C16	1006755-85	CAPACITOR	22	±10 %	35VDC
CR1	1010372-24	DIODE			
Q1	1010397-1	TRANSISTOR	2N930		
Q2	1010397-1	TRANSISTOR	2N930		
Q3	1010397-1	TRANSISTOR	2N930		
Q4	1010269-1	TRANSISTOR	2N2151		
T1	1010910	TRANSFORMER			

REF DWG:
COSECANT GENERATOR ASSY
DWG NO: 2007122

MASTER

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	PRD NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB		MANNED SPACECRAFT CENTER		
HOUSTON, TEXAS		HOUSTON, TEXAS		
SCHEMATIC, COSECANT GENERATOR				
APPROVED BY	DATE	SCALE	DRAWING NO.	SHEET
2010068			2010068	1 OF 1



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RIGHT
↓
LEFT

- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. ☐ DENOTES PIN 10 OF DUAL NOR GATE
 3. ☐ DENOTES OUTPUTS (PINS 1 & 9) OF DUAL NOR GATES
 4. ☐ DENOTES INTER-QUADRANT CONNECTION WITHIN MODULE
 5. ☐ DENOTES MODULE PIN NUMBER
 6. ☐ DENOTES NOR GATE NUMBER
 7. ☐ REPRESENTS CONNECTION TO OVDC SIGNAL
 8. ☐ REPRESENTS CONNECTION TO POWER

QUADRANT NO. 1

MASTER

REF. DWS.
SCHEMATIC 2010053

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	PROD NO.
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.				
DRAWN BY <i>J. B. L.</i>				
CHECKED BY <i>J. B. L.</i>				
APPROVED BY <i>J. B. L.</i>				
DATE <i>1/14/72</i>				
MATERIAL				
NEXT ASSY USED ON				
APPLICATION				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES 10 100 1000 10000 100000 1000000 DO NOT SCALE THIS DRAWING				
LIST OF MATERIALS				
MANNED SPACECRAFT CENTER HOUSTON, TEXAS				
SIGNAL WIRING DIAGRAM				
DIGITAL MODE				
DRAWING NO. 2010069				
SHEET 1 OF 4				

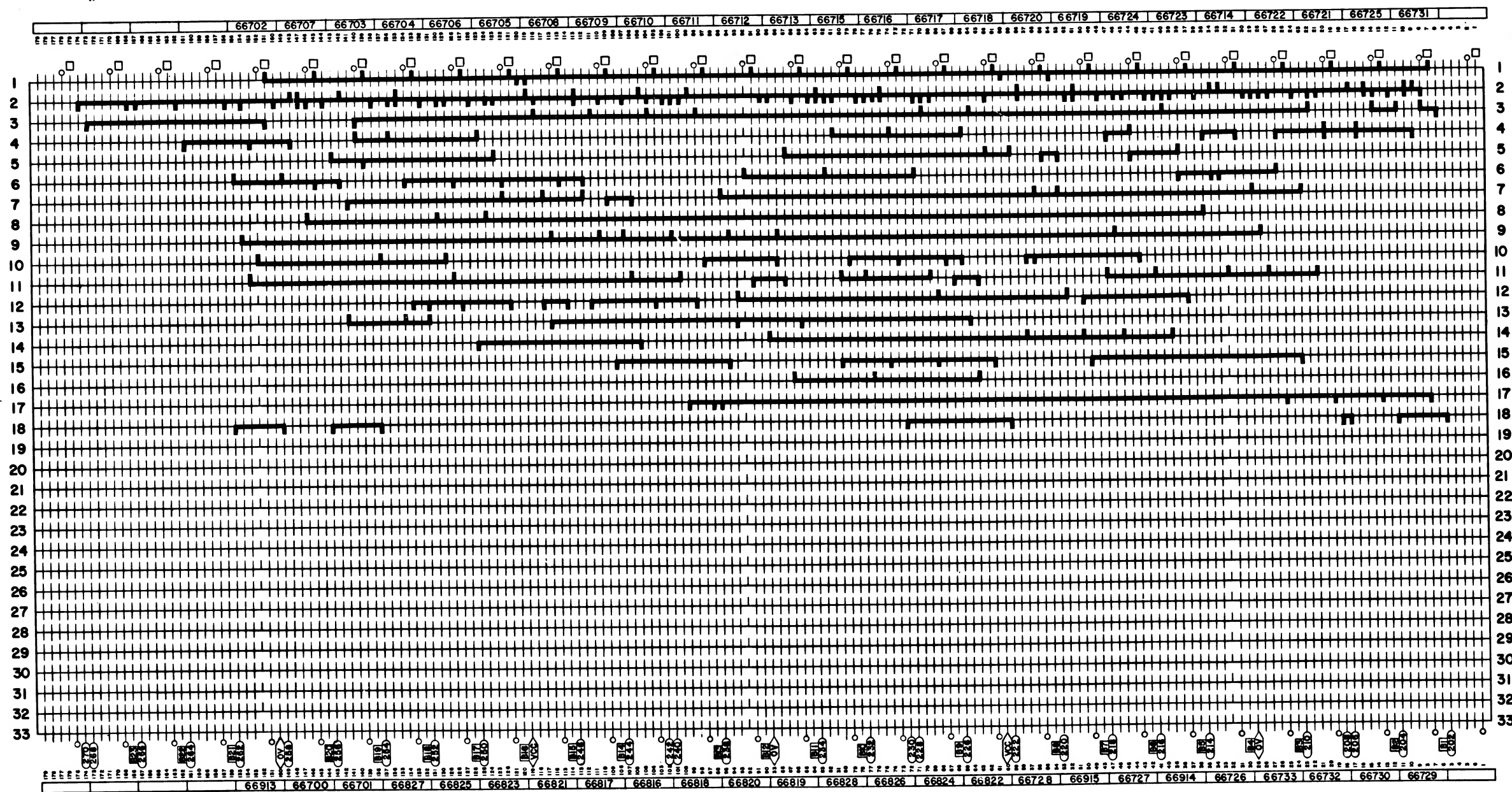


2000年12月15日

QTY. Shops		PART OR IDENTIFYING NO.		MATERIAL OR NOTES		NOMENCLATURE OR DESCRIPTION		PRG. NO.	
LIST OF MATERIALS									
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES IS .01 .05 .10 .25 .50 DO NOT SCALE THIS DRAWING				INSTRUMENTATION LAB CAMBRIDGE, MASS					
MATERIAL				MANNED SPACECRAFT CENTER HOUSTON, TEXAS					
NEXT ASBY USED ON APPLICATION				SIGNAL WIRING DIAGRAM					
APPROVED <i>[Signature]</i>				DIGITAL MODE					
APPROVED <i>[Signature]</i>				CODE IDENT NO.		SIZE		DRAWING NO.	
APPROVED <i>[Signature]</i>				E		2010069		52	
APPROVED <i>[Signature]</i>				SCALE		SHEET		OF	

1. THIS DRAWING IS THE PROPERTY OF THE UNITED STATES GOVERNMENT AND IS LOANED TO YOU BY THE AIR FORCE. IT IS TO BE USED FOR THE PURPOSES FOR WHICH IT WAS LOANED AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM THE AIR FORCE. 2. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 3. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 4. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 5. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 6. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 7. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 8. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 9. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 10. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 11. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 12. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 13. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 14. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 15. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 16. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 17. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 18. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 19. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 20. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 21. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 22. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 23. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 24. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 25. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 26. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 27. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 28. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 29. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 30. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 31. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 32. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES. 33. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSES.

REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	17472	REVISED PER TORR	2010069

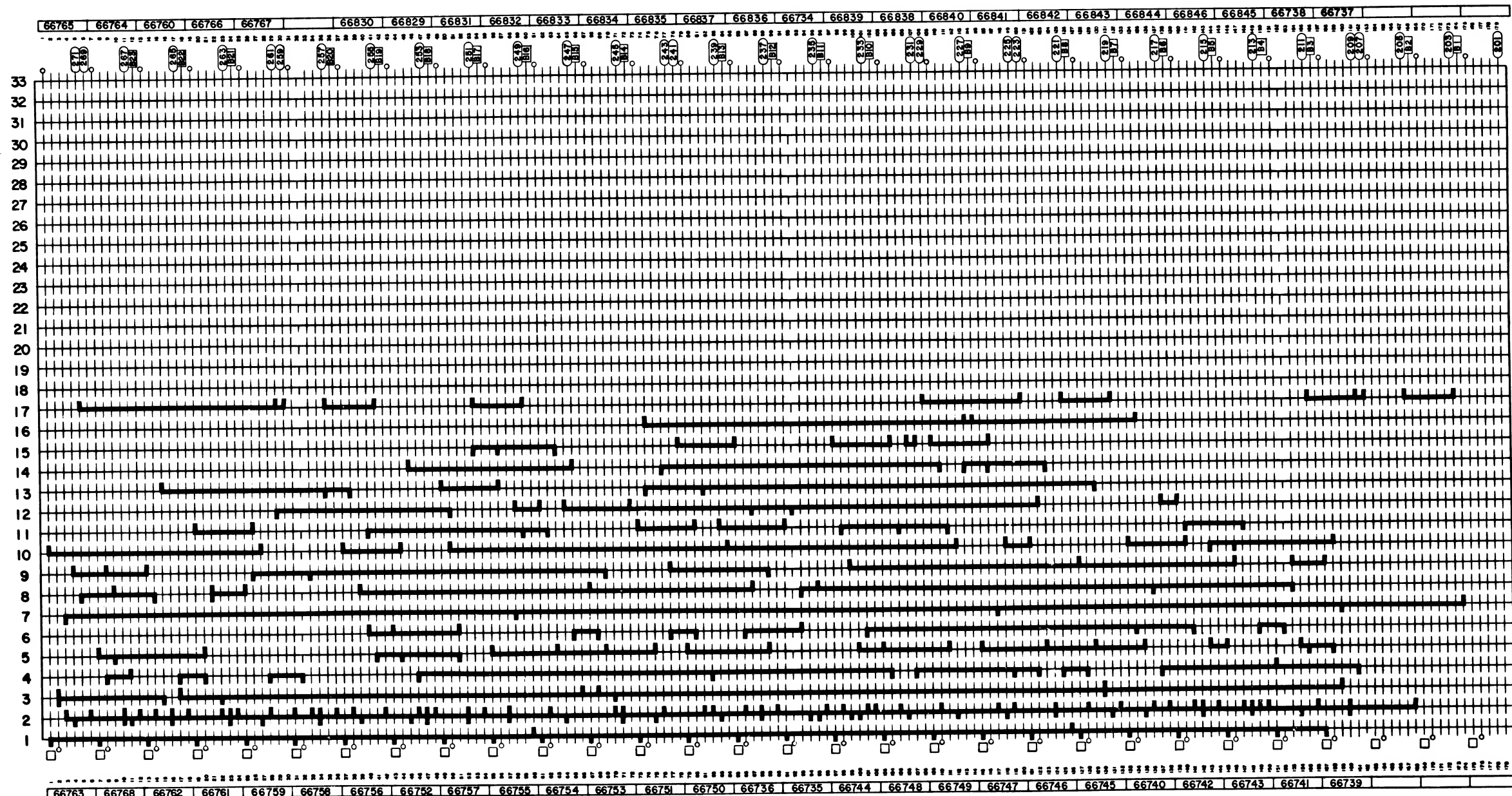


QUADRANT NO. 3

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIG NO.
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		LIST OF MATERIALS MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN BY: <i>J. C. C. C.</i>		SIGNAL WIRING DIAGRAM		
CHECKED BY: <i>J. C. C. C.</i>		DIGITAL MODE		
APPROVED BY: <i>J. C. C. C.</i>		DRAWING NO. 2010069		
APPROVED BY: <i>J. C. C. C.</i>		SHEET 3 OF 4		

REVISIONS

REV	DATE	BY	CHK	DATE	APPROVED
1					
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RIGHT
LEFT

QUADRANT NO. 4

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIG NO
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE MASS				
MANNED SPACECRAFT CENTER HOUSTON, TEXAS				
DRAWN BY: <i>[Signature]</i>				
CHECKED BY: <i>[Signature]</i>				
APPROVED BY: <i>[Signature]</i>				
DO NOT SCALE THIS DRAWING				
MATERIAL				
NEXT ASSY USED ON APPLICATION				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES				
MIT				
APPROVED BY: <i>[Signature]</i>				
DATE: <i>[Date]</i>				
SCALE: <i>[Scale]</i>				
CODE IDENT NO. SIZE				
E 2010069				
DRAWING NO. 2010069				
SHEET 4 OF 4				

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-7087
2. ☐ DENOTES PIN 10 OF DUAL NOR GATE
3. ☐ DENOTES OUTPUTS (PINS 1 & 9) OF DUAL NOR GATES
4. ☐ DENOTES INTER-QUADRANT CONNECTION WITHIN MODULE
5. (XXX) DENOTES MODULE PIN NUMBER
6. (XXX) DENOTES NOR GATE NUMBER
7. ☐ REPRESENTS CONNECTION TO OVDC SIGNAL
8. ☐ REPRESENTS CONNECTION TO POWER

QUADRANT # 1

REF. DWG.
SCHEMATIC 2010053

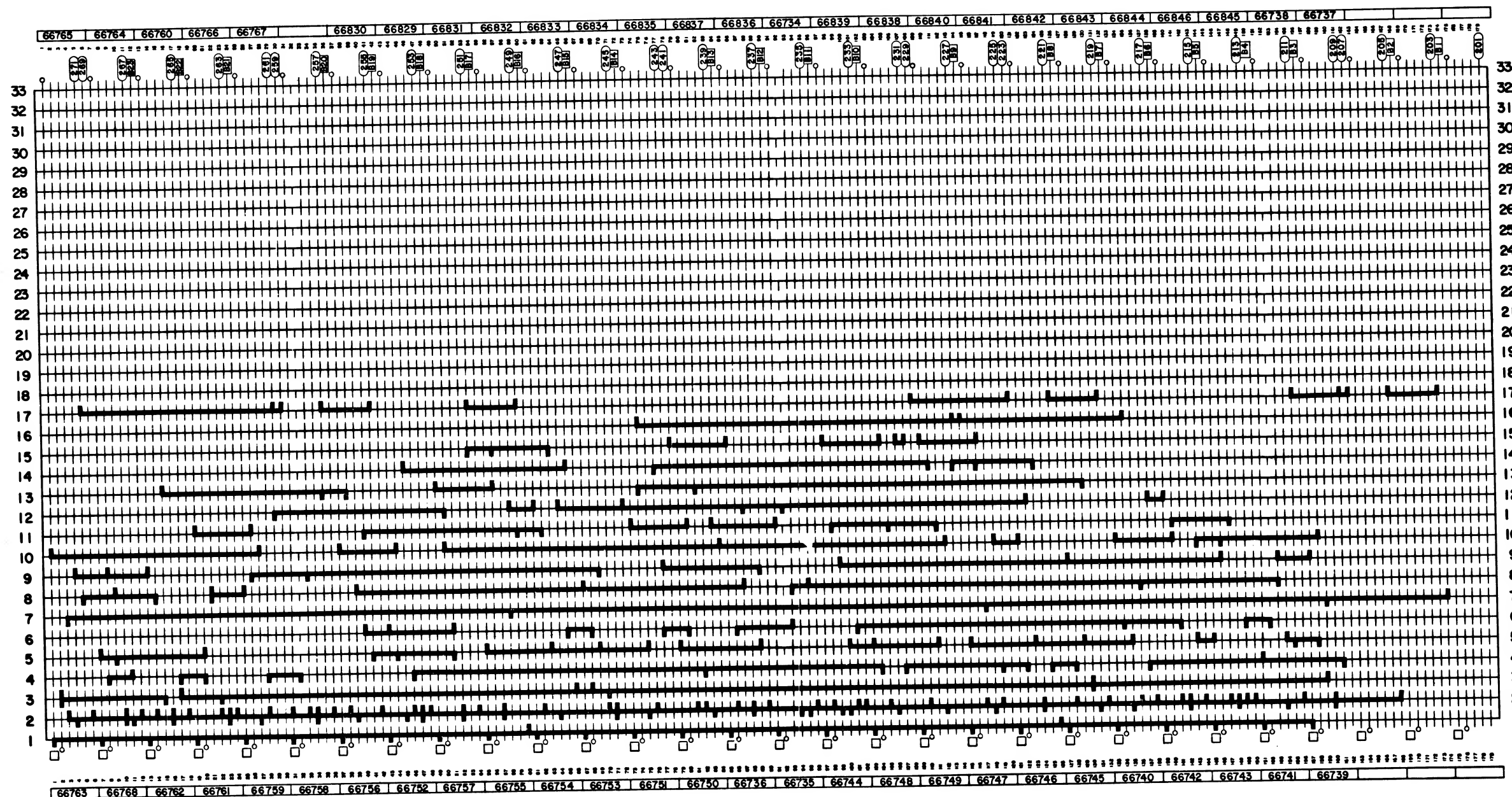
CITY ROOM		PART OR IDENTIFYING NO.		MAT'L OR NOTES		NOMENCLATURE OR DESCRIPTION		PW NO.	
		M I T		LET OF MATERIALS		MANNED SPACECRAFT CENTER			
		INSTRUMENTATION LAB				HUNTSVILLE, TENNESSEE			
		CAMERA-VIDEO SUBS							
		DRAWING		J. Gandy					
		CHECKED		APPROVED					
		APPROVED		APPROVED					
		DO NOT SCALE THIS DRAWING							
		SIGNAL WIRING DIAGRAM							
		DIGITAL MODE							
		APPROVED		APPROVED		CODE IDENT NO.		SIZE	
		M I T		APPROVED		E		2010C659	
		APPROVED		APPROVED		SCALE		NAME	
		NEXT ASSY		USED ON		DRAWN BY		DATE	
		APPLICATION				SCALE		NAME	

QTY REQD		PART OR IDENTIFYING NO.		MATERIAL OR DESCRIPTION NO.		HOMOGENEOUS OR DESCRIPTION	
		M I T INSTRUMENTATION LAB CABLES, ETC.		LIST OF MATERIALS MANNEB SPACECRAFT CENTER HOUSTON, TEXAS			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ RESISTOR VALUES ARE IN OHMS TOLERANCES ON DIMENSIONS ARE AS FOLLOWS: FRACTIONS DECIMALS ANGLES 100% 10% 1% 10% 10% DO NOT SCALE THIS DRAWING		DRAWN BY <i>W. J. Gentry</i>		SIGNAL WIRING DIAGRAM			
		CHECKED BY <i>W. J. Gentry</i>		DIGITAL MODE			
		APPROVED BY <i>W. J. Gentry</i>		CODE IDENT NO.		DRAWING NO.	
		APPROVED BY <i>W. J. Gentry</i>		SIZE		2101069	
		APPROVED BY <i>W. J. Gentry</i>		E			
MATERIAL		APPROVED BY <i>W. J. Gentry</i>		SCALE		SHEET 2 OF 2	
NEXT ASBY USED OR							
APPLICATION							

CITY REQD		PART OR IDENTIFYING NO.		MATERIAL OR NOTES		NOMENCLATURE OR DESCRIPTION		PAGE NO.	
				LIST OF MATERIALS					
				M I T INSTRUMENTATION LAB CAMBRIDGE, MASS		NANNED SPACECRAFT CENTER HUNTSVILLE, TENNESSEE			
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ RESISTOR VALUES ARE IN OHMS TOLERANCES ON FUNCTIONS DECIBELS ARELES DO NOT SCALE THIS DRAWING INTERNAL		DESIGN <i>J. C. [Signature]</i> CHECKED APPROVED <i>[Signature]</i> <i>2/2/68</i> APPROVED <i>[Signature]</i> <i>2/2/68</i>		SIGNAL WIRING DIAGRAM DIGITAL MODE			
				APPROVED <i>[Signature]</i> <i>2/2/68</i> M I T APPROVED <i>[Signature]</i> <i>2/2/68</i> SAC		CODE IDENT NO. SER 2010069		DRAWING NO. SHEET 3 OF 4	
NEXT ASSY		USED ON							
APPLICATION									

REVISIONS

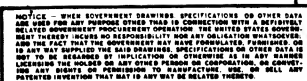
REV	DATE	DESCRIPTION	BY	CHK	DATE	APPROVED
1	10/12					



QUADRANT #4

MASTER

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIG NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
CHECKED <i>J. R. Ruff</i>		SIGNAL WIRING DIAGRAM		
APPROVED <i>J. R. Ruff</i> 10/12		DIGITAL MODE		
APPROVED <i>J. R. Ruff</i> 10/12		DRAWING NO.		
MIT		E 200069		
DATE		SCALE		
APPLICATION		SHEET 4 OF 4		



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010389-50	RESISTOR	560	1 %	3W
R2	1010452-129		536	1 %	1W
R3	1010389-39		200	1 %	3W
R4	1010389-39		200	1 %	3W
R5	1010369-141		10	5 %	1/8W
R6	1010364-353		3400	1 %	1/8W
R7	SEE NOTE 4		NOM	1 %	1/2W
R8	SEE NOTE 4		NOM	1 %	1/8W
R9	1010364-225		732	1 %	1/8W
R10	1006750-43		3000	2 %	1/4W
R11	↓ -43		3000		
R12	↓ -56		10 K		
R13	↓ -56		10 K		
R14	1006750-49	RESISTOR	5100	2 %	1/4W
C1	1006789-002	CAPACITOR	47	10 %	50V
C2	1006789-002	CAPACITOR	47	10 %	50V
C3	1006789-002	CAPACITOR	47	10 %	50V
CR1	1010837-001	DIODE	1N645		
CR2	↓ -001				
CR3	↓ -001				
CR4	↓ -001				
CR5	↓ -001				
CR6	1010837-001		1N645		
CR7	1010829-25				
CR8	1010372-24				
CR9	1010259	DIODE	1N825		
T1	1010751	TRANSFORMER			
Q1	1010398-1	TRANSISTOR	2N2193A		
Q2	1010269-1	TRANSISTOR	2N2151		
Q3	1010633-1	TRANSISTOR	2N2303		
F2	1000170-6	FUSE			0.5A
F3	1000170-6	FUSE			0.5A
F4	1000170-4	FUSE			0.125A

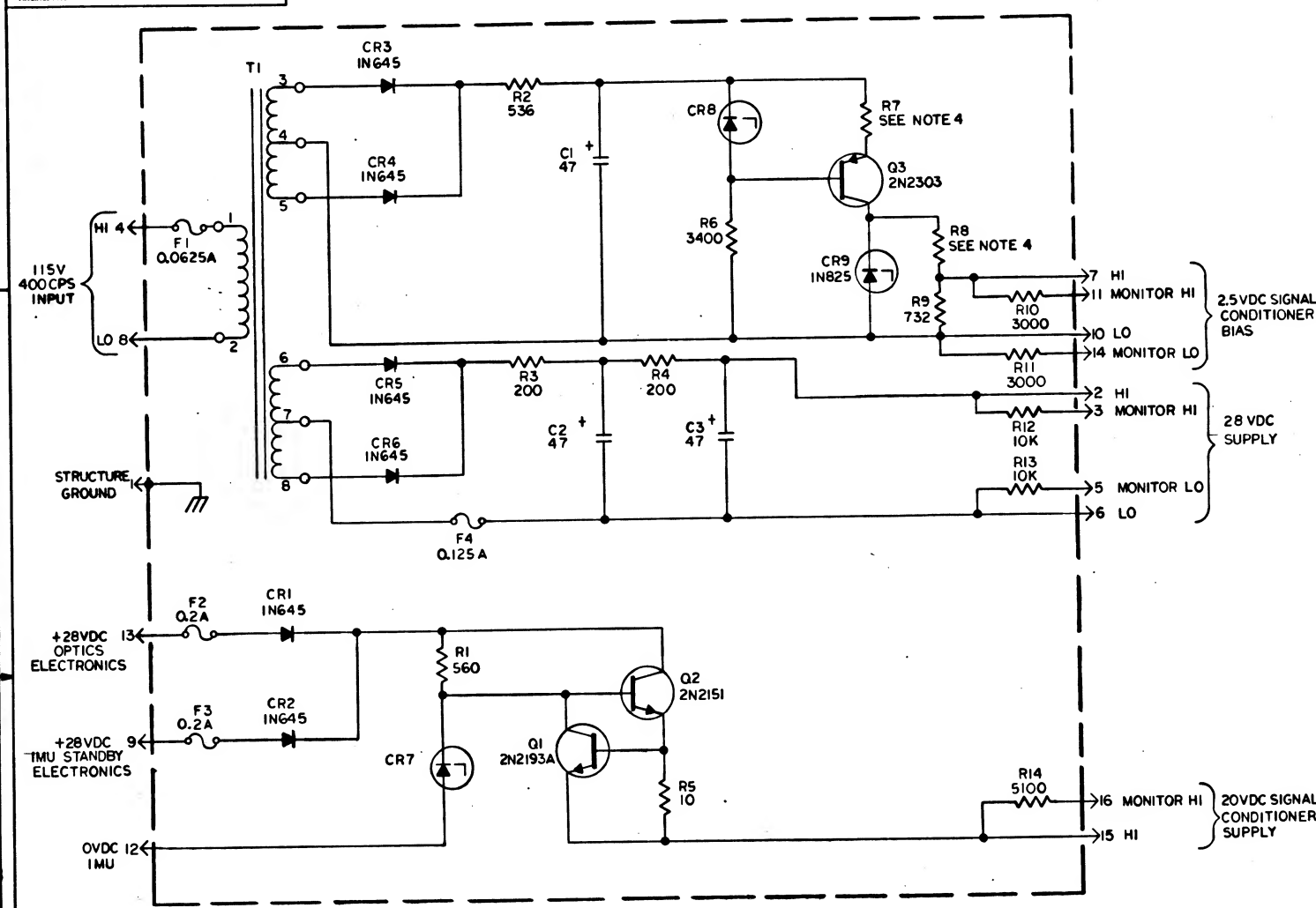
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. RESISTOR VALUES TO BE IN OHMS UNLESS OTHERWISE SPECIFIED
3. CAPACITOR VALUES TO BE IN MICROFARADS UNLESS OTHERWISE SPECIFIED
4. SELECT R7& R8 FROM APPROPRIATE CHART

REF DWG:
POWER SUPPLY , SIGNAL CONDITIONER
ASS'Y DWG NO.2007119

		QTY REQ		PART OR IDENTIFYING NO.		NOMENCLATURE OR DESCRIPTION		
		LIST OF MATERIALS						
		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ± ± DO NOT SCALE THIS DRAWING MATERIAL _____		M I T INSTRUMENT LAB CHANDLER, MASS DWS NO. _____ CONTRACT _____ DRAWN <i>Tom Kellum</i> DATE <i>25 JAN 65</i> CHECKED <i>A. J. Johnson, JES</i> APPROVAL <i>Donna L. High</i> <i>15 FEB. 65</i> APPROVAL _____		MANNED SPACECRAFT CENTER HOUSTON, TEXAS SCHEMATIC POWER SUPPLY SIGNAL CONDITIONER		
		HEAT TREATMENT _____		NASA APPROVAL <i>W. J. P. 5-5-65</i>		CODE IDENT NO.	SIZE	NASA DRAWING NO.
NEXT ASSY		USED ON		MIT APPROVAL <i>W. J. P. 5-5-65</i>		80230	D	2010070
APPLICATION		FINAL FINISH _____		SCALE _____		WT _____	SHEET 1 OF 1	

NOTES: 1. WHEN DIMENSIONS ARE SPECIFIED IN INCHES, DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED. 2. DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED. 3. DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED. 4. DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010389-50	RESISTOR	560	1%	3W
R2	1010452-129		536	1%	1W
R3	1010389-39		200	1%	3W
R4	1010389-39		200	1%	3W
R5	1010369-141		10	5%	1/8W
R6	1010364-353		3400	1%	1/8W
R7	SEE NOTE 4		NOM	1%	1/2W
R8	SEE NOTE 4		NOM	1%	1/8W
R9	1010364-225		732	1%	1/8W
R10	1006750-43		3000	2%	1/4W
R11	-43		3000		
R12	-56		10K		
R13	-56		10K		
R14	1006750-49	RESISTOR	5100	2%	1/4W
C1	1006789-002	CAPACITOR	47	10%	50V
C2	1006789-002	CAPACITOR	47	10%	50V
C3	1006789-002	CAPACITOR	47	10%	50V
CR1	1010837-001	DIODE	IN645		
CR2	-001				
CR3	-001				
CR4	-001				
CR5	-001				
CR6	1010837-001		IN645		
CR7	1010829-25				
CR8	1010372-24				
CR9	1010259	DIODE	IN825		
T1	1010751	TRANSFORMER			
Q1	1010398-1	TRANSISTOR	2N2193A		
Q2	1010269-1	TRANSISTOR	2N2151		
Q3	1010633-1	TRANSISTOR	2N2303		
F1	1000170-2	FUSE			0.0625A
F2	1000170-6	FUSE			0.2A
F3	1000170-6	FUSE			0.2A
F4	1000170-4	FUSE			0.125A

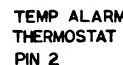
- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. RESISTOR VALUES TO BE IN OHMS UNLESS OTHERWISE SPECIFIED
 3. CAPACITOR VALUES TO BE IN MICROFARADS UNLESS OTHERWISE SPECIFIED
 4. SELECT R7 & R8 FROM APPROPRIATE CHART

R7		R8	
PART NO.	VALUE	PART NO.	VALUE
1010267-171	1470	1010364-255	1050
-172	1500	-257	1070
-173	1540	-259	1100
-174	1580	-261	1130
-175	1620	-263	1150
-176	1650	1010364-265	1180
1010267-177	1690		

REF DWG:
POWER SUPPLY, SIGNAL CONDITIONER
ASS'Y DWG NO.2007119

MASTER

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIN NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN <i>Tom H. Jones</i> DATE 23 JAN 65		SCHEMATIC POWER SUPPLY SIGNAL CONDITIONER	
CHECKED <i>W. J. Jones</i> DATE 1 FEB 65		CODE IDENT NO. SIZE NASA DRAWING NO.	
APPROVAL <i>W. J. Jones</i> DATE 12 FEB 65		D 2010070	
NESA APPROVAL <i>W. J. Jones</i>		SCALE WT SHEET 1 OF 1	
MIT APPROVAL <i>W. J. Jones</i>			



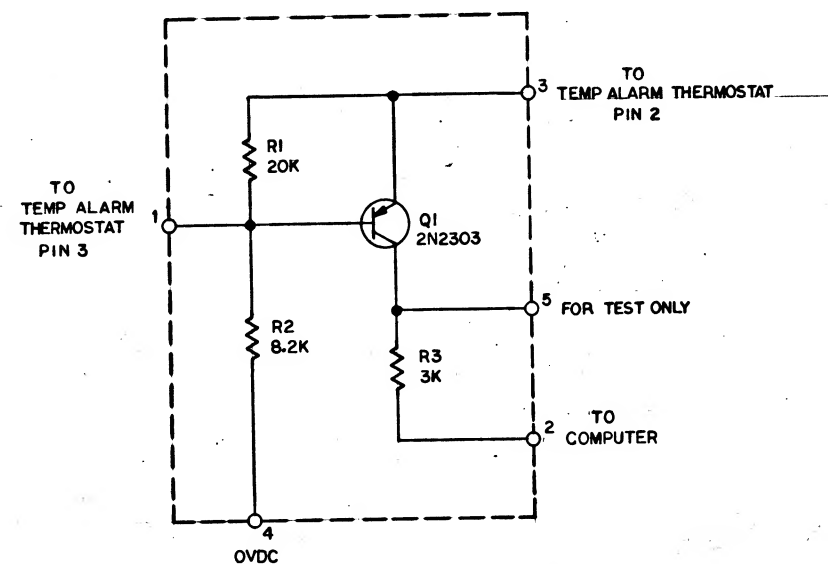
STED

REF DWG: TEMPERATURE ALARM MODULE ASSY
DWG NO. 2007170

QTY REQD	PART IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION		FIN NO.
LIST OF MATERIALS					
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS			
DRAWN <i>WJ/Carlin</i> <i>2/16/66</i>		SCHEMATIC TEMPERATURE ALARM MODULE			
CHECKED <i>WJ/Carlin</i> <i>2/25/66</i>					
APPROVED <i>WJ/Carlin</i> <i>2/25/66</i>					
APPROVED _____					
APPROVED MIT	<i>WJ/Carlin</i> <i>2/16/66</i>	CODE IDENT NO.	SIZE	DRAWING NO.	
		_____	D	2010072	
APPROVED MSC	<i>WJ/Carlin</i> <i>2/25/66</i>	DATE	SCALE NONE	SHEET	OF
2				1	

NOTES: WHEN INSTRUMENT SPECIFICATIONS OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFENSE RESEARCH AND DEVELOPMENT PROGRAM, THE USER SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMISSIONS FROM THE GOVERNMENT. THE GOVERNMENT ASSUMES NO LIABILITY FOR ANY DAMAGE TO PERSONS OR PROPERTY, OR FOR ANY LOSS OF DATA, OR FOR ANY OTHER CONSEQUENCES OF ANY USE OF THIS DRAWING. THE GOVERNMENT ASSUMES NO LIABILITY FOR ANY DAMAGE TO PERSONS OR PROPERTY, OR FOR ANY LOSS OF DATA, OR FOR ANY OTHER CONSEQUENCES OF ANY USE OF THIS DRAWING.

REVISIONS 10822					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE
A		REVISED PER TDRR 17273			5-9-65
B		REVISED PER TDRR 18092	AD	CP	6/1/65



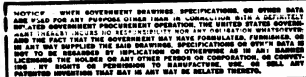
REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-63	RESISTOR	20K	± 2%	1/4 W
R2	1006760-54	RESISTOR	8.2K	± 2%	1/2 W
R3	1006760-43	RESISTOR	3K	± 2%	1/2 W
Q1	1010633-1	TRANSISTOR	2N2303		

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

REF DWG: TEMPERATURE ALARM MODULE ASSY
DWG NO. 2007170

MASTER

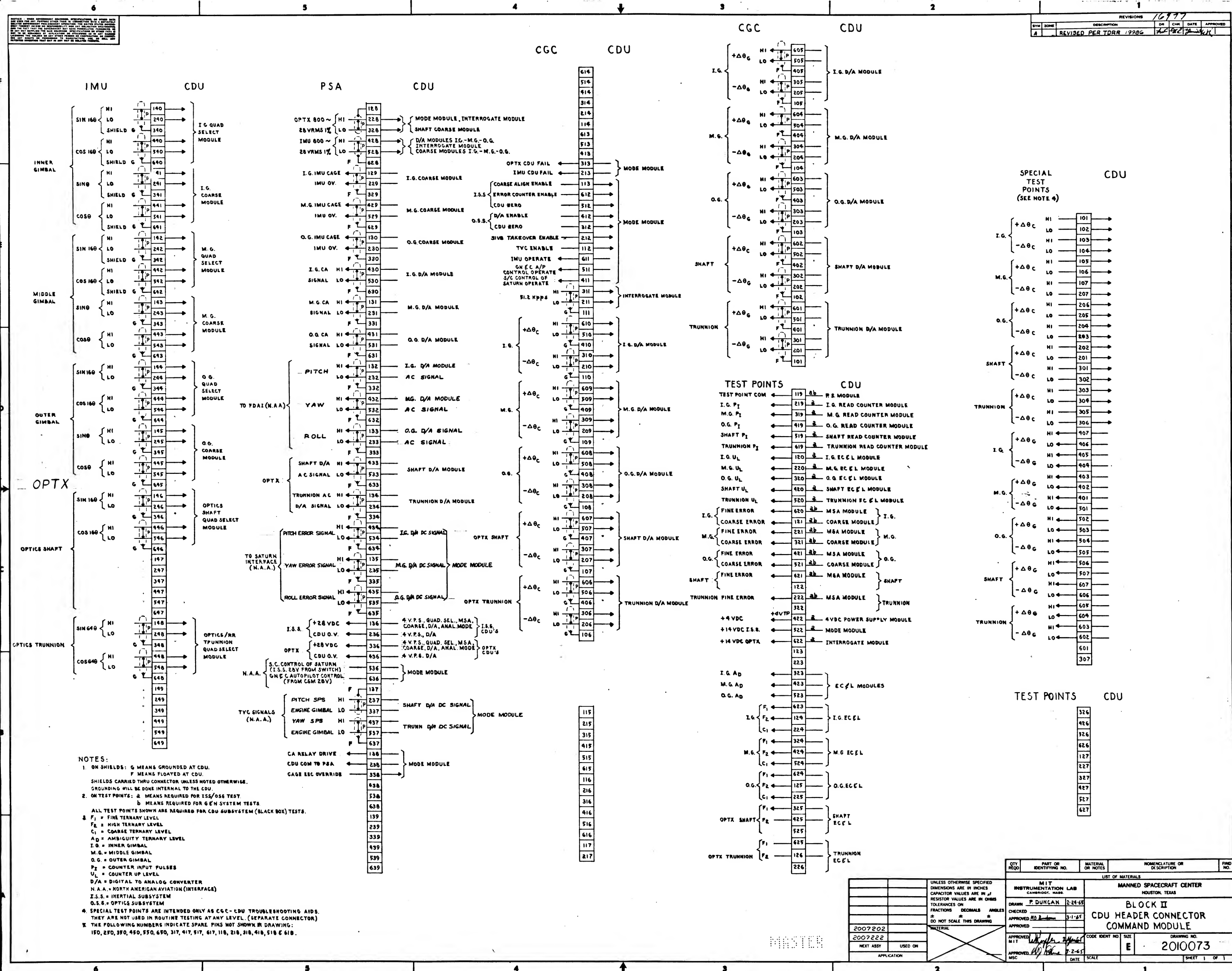
QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIG NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>W. C. C. 10/26/65</i>		SCHEMATIC, TEMPERATURE ALARM MODULE		
CHECKED <i>W. C. C. 10/26/65</i>		DRAWING NO. 2010072		
APPROVED <i>W. C. C. 10/26/65</i>		CODE IDENT NO. 80230	SIZE D	SHEET 1 OF 1
APPROVED <i>W. C. C. 10/26/65</i>		DATE	SCALE NONE	



SYM		ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
REVISIONS 10822							

MOSTER

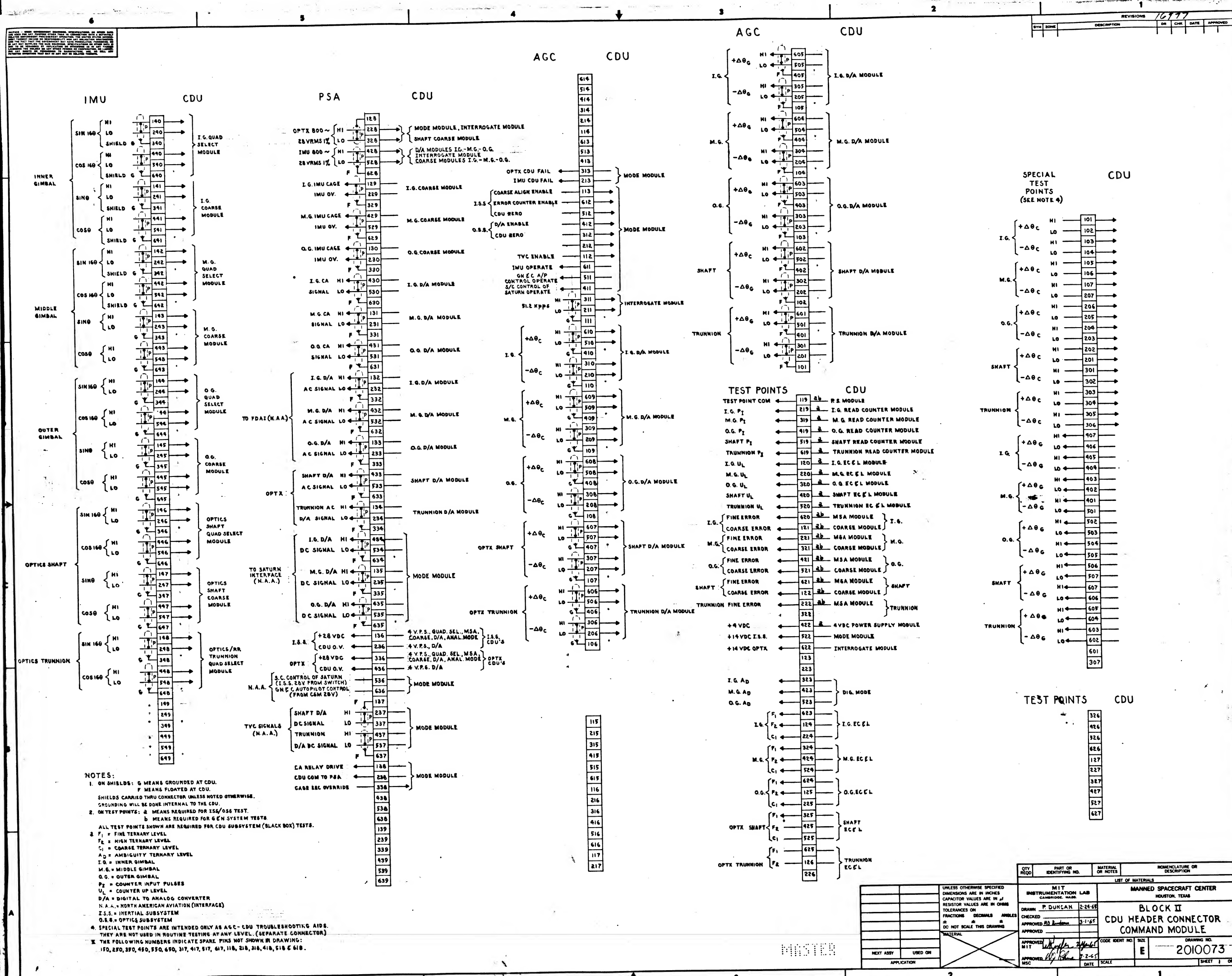
[illegible]



NOTES:
1. ON SHIELDS: G MEANS GROUNDED AT CDU.
F MEANS FLOATED AT CDU.
SHIELDS CARRIED THRU CONNECTOR UNLESS NOTED OTHERWISE.
GROUNDING WILL BE DONE INTERNAL TO THE CDU.
2. ON TEST POINTS: a MEANS REQUIRED FOR ISS/OSG TEST.
b MEANS REQUIRED FOR GSN SYSTEM TESTS.
ALL TEST POINTS SHOWN ARE REQUIRED FOR CDU SUBSYSTEM (BLACK BOX) TESTS.
3. F₁ = FINE TERNARY LEVEL
F₂ = HIGH TERNARY LEVEL
C₁ = COARSE TERNARY LEVEL
A₁ = AMBIGUITY TERNARY LEVEL
I.G. = INNER GIMBAL
M.G. = MIDDLE GIMBAL
O.G. = OUTER GIMBAL
P₁ = COUNTER INPUT PULSES
U₁ = COUNTER UP LEVEL
D/A = DIGITAL TO ANALOG CONVERTER
N.A.A. = NORTH AMERICAN AVIATION (INTERFACE)
I.S.S. = INERTIAL SUBSYSTEM
O.S.S. = OPTICS SUBSYSTEM
4. SPECIAL TEST POINTS ARE INTENDED ONLY AS CGC - CDU TROUBLESHOOTING AIDS.
THEY ARE NOT USED IN ROUTINE TESTING AT ANY LEVEL. (SEPARATE CONNECTOR)
5. THE FOLLOWING NUMBERS INDICATE SPARE PINS NOT SHOWN IN DRAWING:
150, 250, 350, 450, 550, 650, 317, 417, 517, 617, 118, 218, 318, 418, 518, 618.

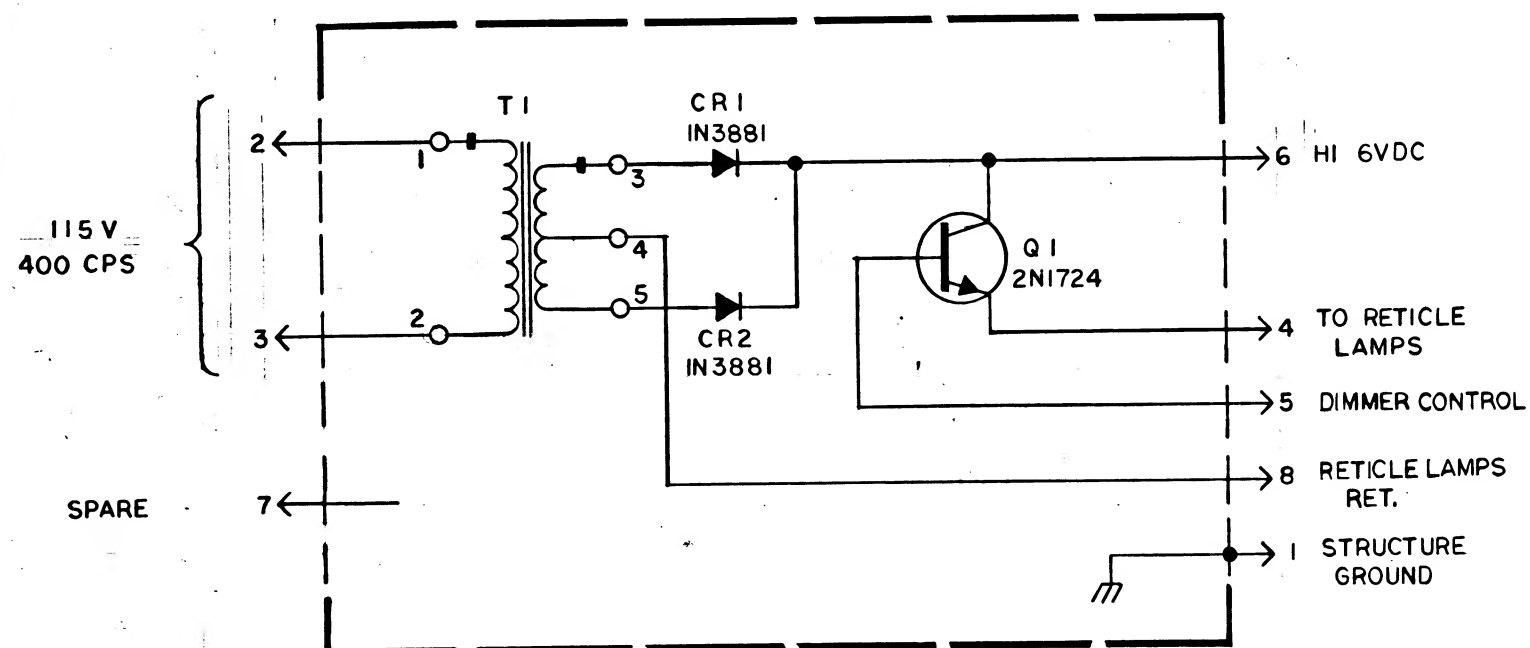
REVISIONS		DATE	APPROVED
1	REVISED PER DRR 19286	10/2/73	W. J. H. / J. H. H.

QTY	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	REV
1	MIT INSTRUMENTATION LAB		MANNE SPACECRAFT CENTER	
1	2007202		BLOCK II	
1	2007222		CDU HEADER CONNECTOR	
1			COMMAND MODULE	
1			2010073	



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REVISIONS 17829					
SYM	ZONE	DESCRIPTION	DR	CHK	DATE
A		REVISED PER TDRR 18963	AFW	RJ	10 MAY 65



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
CR1	1010777-1	DIODE	IN3881		
CR2	1010777-1	DIODE	IN3881		
Q1	1010273-1	TRANSISTOR	2N1724		
T1	1010914-1	TRANSFORMER			

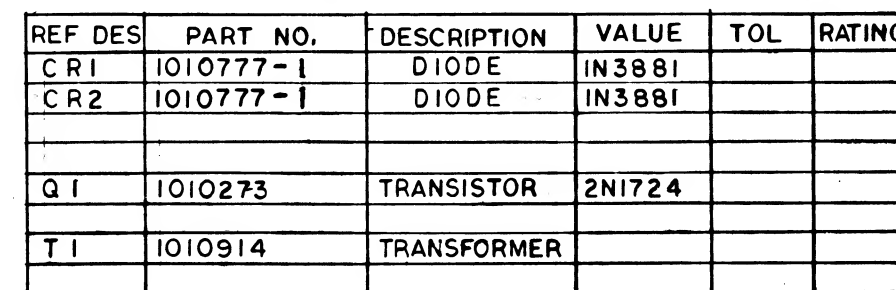
REF DWG:
RETICLE LIGHT DIMMER ASSY
DWG NO. 2007161

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
PRESCRIBED BY MIL-D-70327

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ f RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES \pm \pm \pm DO NOT SCALE THIS DRAWING
		MATERIAL
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN	A. D. Leo	8 MAR 65	SCHEMATIC, RETICLE LIGHT DIMMER	
CHECKED	AFW	3-14-65		
APPROVED	EA Woodin			
APPROVED			DRAWING NO.	
MIT			2010074	
APPROVED			CODE IDENT NO.	SIZE
MSC			80230	C
			DATE	SHEET 1 OF 1

REVISIONS <i>17829</i>						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED



NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
PRESCRIBED BY MIL-D-70327

NEXT ASSY	USED ON
APPLICATION	

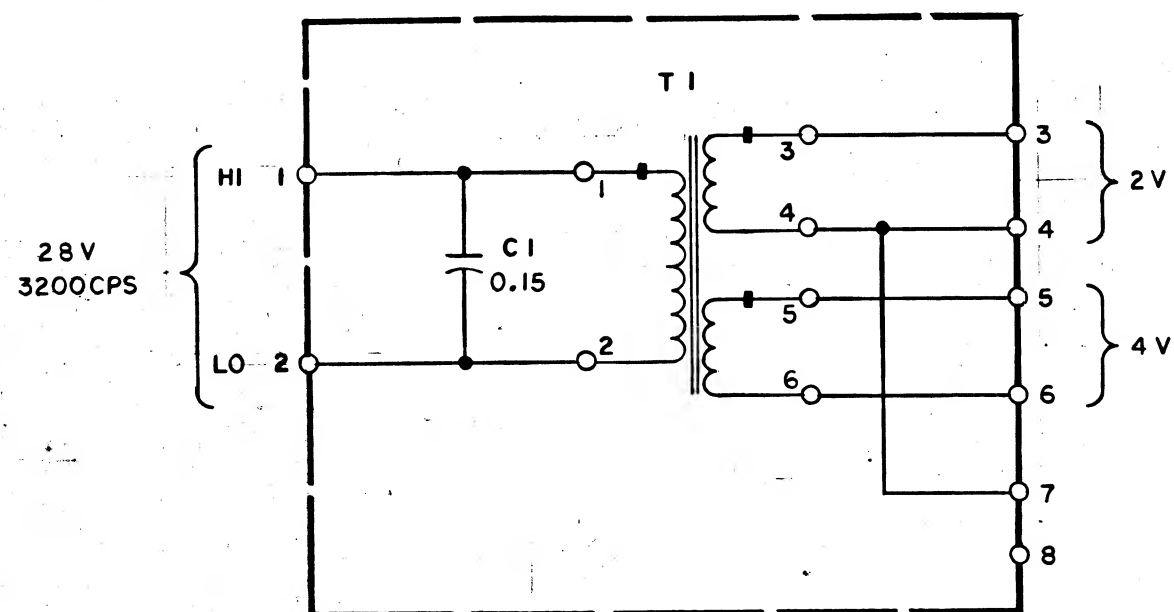
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μf
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
 \pm ——— \pm ——— \pm ———
DO NOT SCALE THIS DRAWING

MATERIAL	
1	100
2	100
3	100
4	100
5	100
6	100
7	100
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9	100
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11	100
12	100
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96	100
97	100
98	100
99	100
100	100

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION		NO.
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.			LIST OF MATERIALS MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>A. D. Leo</i>	<i>8 MAR 62</i>	SCHEMATIC, RETICLE LIGHT DIMMER			
CHECKED <i>W. C. [unclear]</i>	<i>3-17-65</i>				
APPROVED <i>Ed Woodin</i>					
APPROVED					
APPROVED MIT <i>W. C. [unclear]</i>	<i>2/11/66</i>	CODE IDENT NO. —	SIZE C	DRAWING NO. 2010074	
APPROVED MSC <i>[Signature]</i>	DATE <i>3/29/67</i>	SCALE		SHEET	OF

mas100

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY DELIBERATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
C1	1010938	CAPACITOR	0.15	± 5%	100VDC
T1	1010888	TRANSFORMER			

NOTES:

- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

REF DWG:

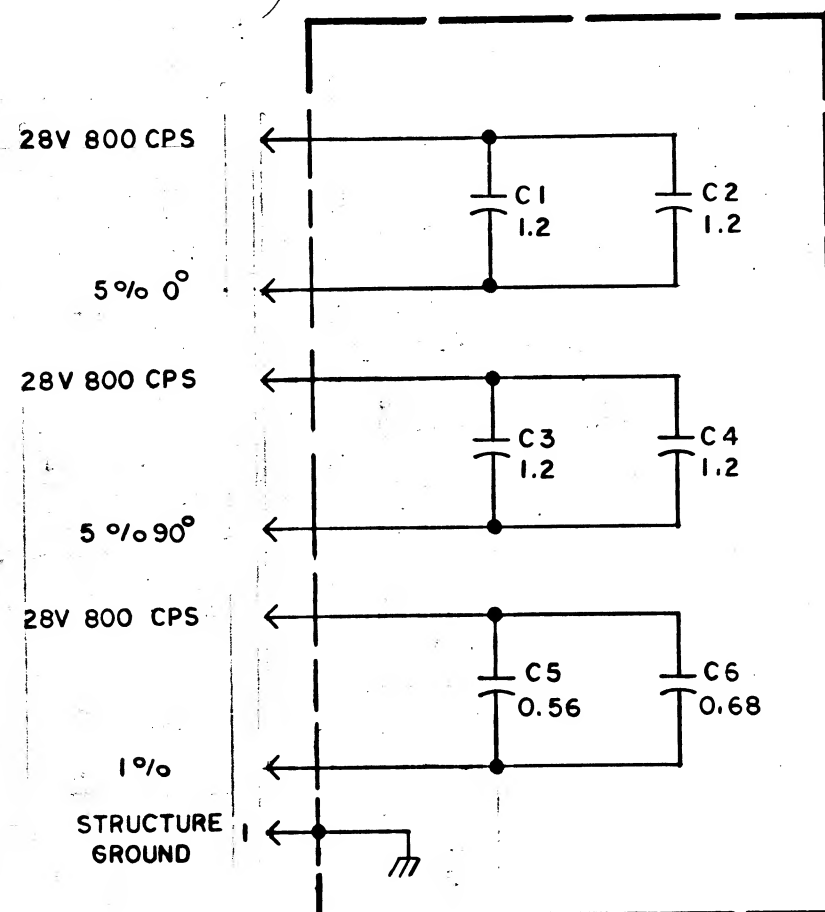
DUCOSYN TRANSFORMER ASSY
DWG NO. 2007019

MASTER

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ f RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES ± — ± — ± — DO NOT SCALE THIS DRAWING
		MATERIAL
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>A. Di Leo</i> <i>5 MAR 65</i>		SCHEMATIC,		
CHECKED <i>Donald Kramer</i> <i>1 MAR 65</i>		DUCOSYN TRANSFORMER		
APPROVED <i>M. S. Murphy</i> <i>3-9-65</i>		CODE IDENT NO.	SIZE	DRAWING NO.
APPROVED <i>M. S. Murphy</i> <i>3/11/65</i>			C	2010075
DATE		SCALE	SHEET OF	

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
C 1	1010264-122	CAPACITOR	1.2	± 5%	200 VDC
C 2	-122		1.2		
C 3	-122		1.2		
C 4	-122		1.2		
C 5	-34		0.56		
C 6	1010264-35	CAPACITOR	0.68	± 5%	200VDC

REF DWG !
LOAD COMPENSATION MODULE ASSY
DWG NO. 2007132

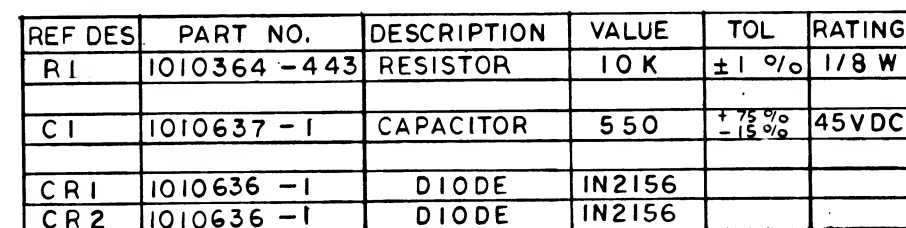
NOTES:

- INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES \pm \pm \pm DO NOT SCALE THIS DRAWING
		MATERIAL
NEXT ASSY	USED ON	
APPLICATION		

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>A. Di Leo</i> 5 MAR 65		SCHEMATIC,		
CHECKED <i>E. J. Smith</i> 25 MAR 65		IMU LOAD COMPENSATION MODULE		
APPROVED <i>P. J. Giben</i> 29 APR 65				
APPROVED <i>W. J. Rine</i> 10 APR 65		CODE IDENT NO.	SIZE	DRAWING NO.
APPROVED <i>W. J. Rine</i> 4-1-65			C	2010076
DATE	SCALE	SHEET 1 OF 1		

REVISIONS 17953						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
A		REVISED PER TDRR 18969	244			W



NOTES:

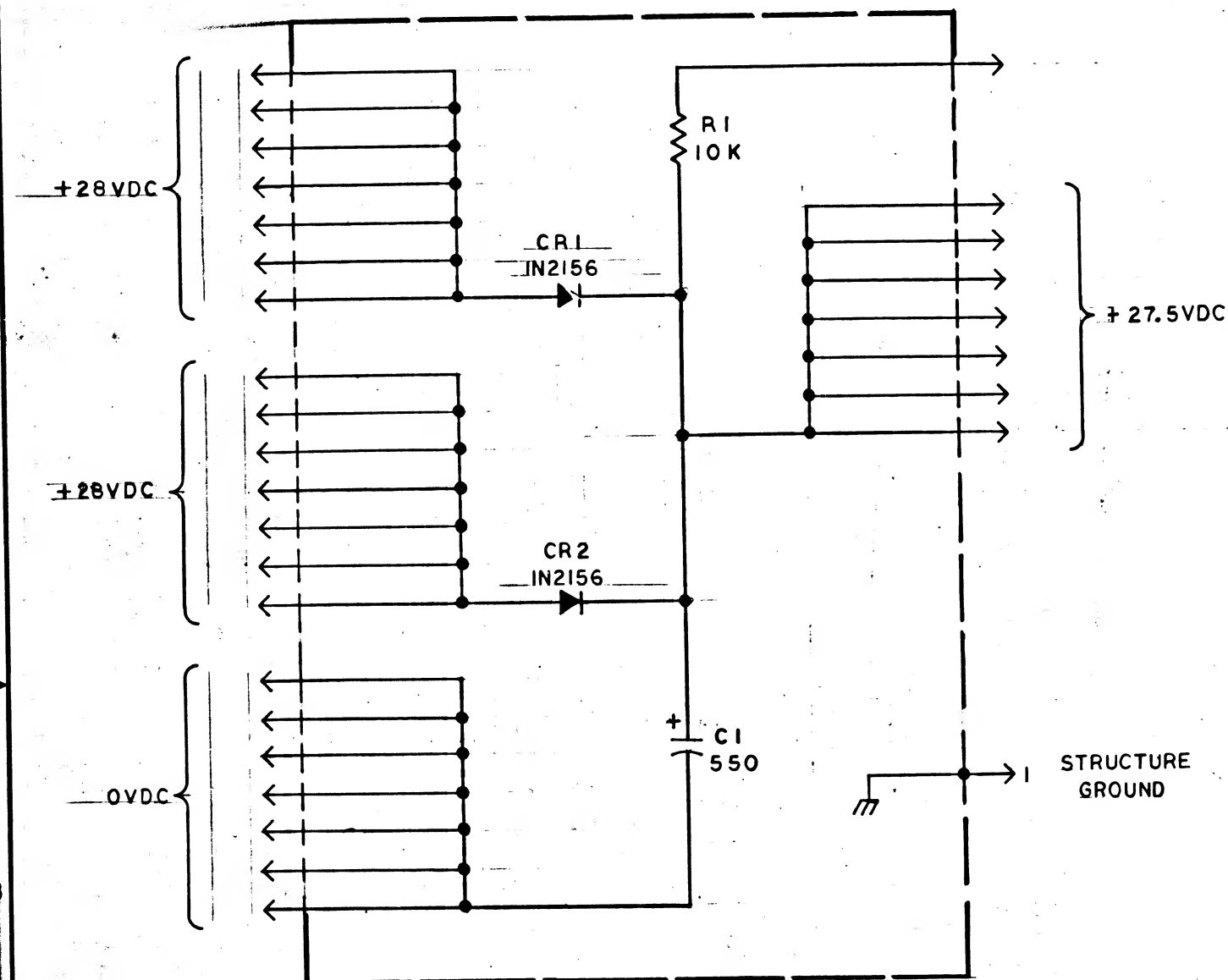
1. INTERPRET DRAWING IN ACCORDANCE WITH
STANDARDS PRESCRIBED BY MIL-D-70327

MASTER

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
CAPACITOR VALUES ARE IN μ f
RESISTOR VALUES ARE IN OHMS
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
 \pm ——— \pm ——— \pm —
DO NOT SCALE THIS DRAWING
MATERIAL

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>Q. Di Leo</i> <i>26 MAR 65</i>		SCHEMATIC, G & N SUBSYSTEM SUPPLY FILTER		
CHECKED <i>Q. Di Leo</i> <i>3/26/65</i>				
APPROVED <i>J. E. Brown</i>				
APPROVED <i>J. E. Brown</i> <i>3/26/65</i>				
APPROVED MIT <i>W. J. Rhea</i> <i>4/1/65</i>		CODE IDENT NO.	SIZE	DRAWING NO.
APPROVED MSC <i>W. J. Rhea</i> <i>4-1-65</i>		80230	C	2010078
DATE		SCALE	SHEET OF	

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED HERETO.



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1010364 -4 43	RESISTOR	10 K	± 1 %	1/8 W
C1	1010637 -1	CAPACITOR	550	+ 75 % - 15 %	45VDC
CR1	1010636 -1	DIODE	IN2156		
CR2	1010636 -1	DIODE	IN2156		

REF DWG:

G & N SUBSYSTEM SUPPLY FILTER ASSY
DWG NO. 2007113

NOTES:

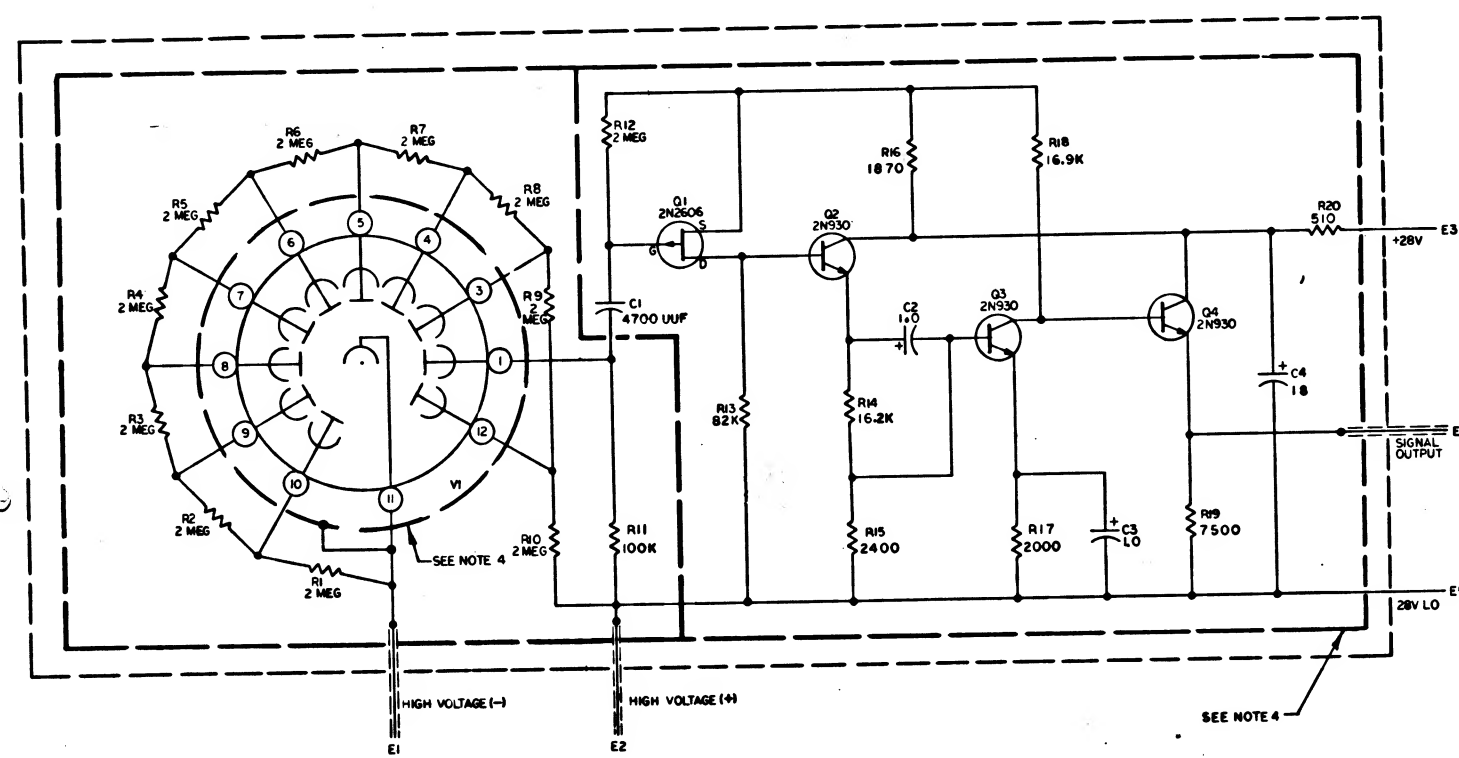
1. INTERPRET DRAWING IN ACCORDANCE WITH
STANDARDS PRESCRIBED BY MIL-D-70327

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ± DO NOT SCALE THIS DRAWING	
MATERIAL	
NEXT ASSY	USED ON
APPLICATION	

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>A. D. Leo</i>	CHECKED <i>26 MAR 65</i>	SCHEMATIC, G & N SUBSYSTEM SUPPLY FILTER		
APPROVED <i>J. E. Miller</i>	APPROVED <i>W. J. Miller</i>	DRAWING NO. 2010078		
APPROVED MIT	APPROVED MSC	CODE IDENT NO.	SIZE C	SHEET 1 OF 1
DATE		SCALE		

REVISIONS

REV	DESCRIPTION	DATE	APPROVAL
1	INITIAL DESIGN		



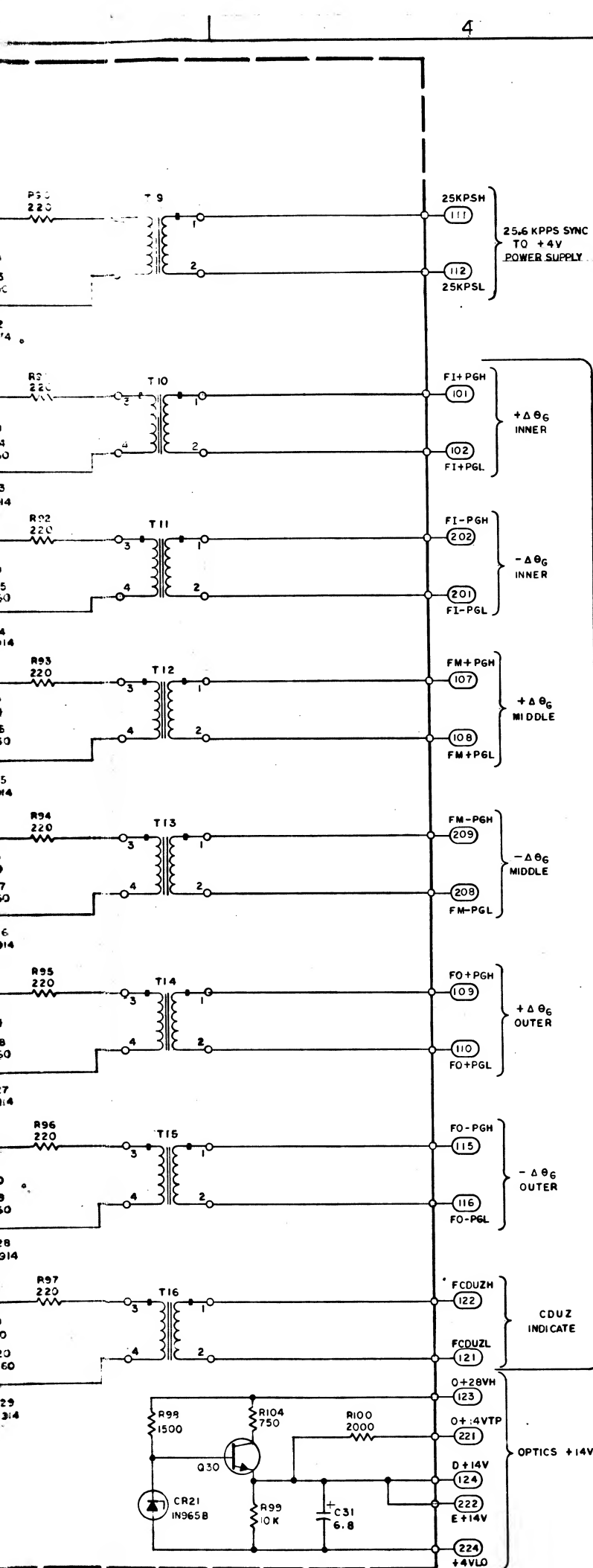
REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	100768-58	RESISTOR	2 MEG	±1%	1/8 W
R2					
R3					
R4					
R5					
R6					
R7					
R8					
R9					
R10	1010768-58		2 MEG	±1%	1/8 W
R11	1006750-80		100 K	±2%	1/4 W
R12	1010768-58		2 MEG	±1%	1/8 W
R13	1006750-78		8.2 K	±2%	1/8 W
R14	1010364-484		16.2 K	±1%	1/8 W
R15	1006750-41		2400	±2%	1/4 W
R16	1010364-304		1870	±1%	1/8 W
R17	1006750-39		2000	±2%	1/4 W
R18	1010364-488		16.9 K	±1%	1/8 W
R19	1006750-53		7500	±2%	1/4 W
R20	1006750-25		510	±2%	1/4 W
C1	1006777-28	CAPACITOR	4700 UUF	±5%	100VDC
C2	1006755-69		1.0	±10%	35VDC
C3	1006755-69		1.0	±10%	35VDC
C4	1012502		1.8	±10%	50VDC
Q1	1012048	TRANSISTOR	2N2606		
Q2	1010397-1		2N930		
Q3					
Q4					
VI	1012043-2	PHOTO MULTIPLIER TUBE			

- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. UNLESS OTHERWISE SPECIFIED, RESISTOR VALUES ARE EXPRESSED IN OHMS
 3. UNLESS OTHERWISE SPECIFIED, CAPACITOR VALUES ARE EXPRESSED IN MICROFARADS
 4. DASH LINES DENOTE MAGNETIC SHIELD

REF DWG:
HEAD ELECTRONICS ASSEMBLY (PHOTOMETER)
DWG NO. 2007025

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	PHOTO NO.
LIST OF MATERIALS			
BY: INSTRUMENTATION LAB		MANNED SPACECRAFT CENTER	
DATE: 10/10/68		HOUSTON, TEXAS	
DRAWN: [Signature]		SCHEMATIC, HEAD ELECTRONICS (PHOTOMETER)	
CHECKED: [Signature]		NASA DRAWING NO. 80230 E 2010079	
APPROVED: [Signature]		SCALE: 1/1	
NEXT APPR: [Signature]		SHEET 1 OF 1	

MASTER



LEM ABORT
GUIDANCE SIGNALS

OPTICS +14V

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-5	RESISTOR	75	2%	1/4 W
R2	1006750-5		75	2%	1/4 W
R3	1006750-65		24K	2%	1/4 W
R4	1006750-56		10K	2%	1/4 W
R5	1010369-32		300K	5%	1/8 W
R6	1006750-36		1500	5%	1/4 W
R7	1010369-105		1MEGO	5%	1/8 W
R8	1006750-62		18K	5%	1/4 W
R9	1006750-32		1000	2%	1/4 W
R10	1010604-39		2000	1%	1 W
R11	1006750-56		10K	2%	1/4 W
R12	-44		3500		
R13	-39		2000		
R14	-56		10K		
R15	-8		100		
R16	-77		75K		
R17	-56		10K		
R18	-56		10K		
R19	-65		24K		
R20	-32		1000		
R21	-24		470		
R22	-63		20K		
R23	-72		47K		
R24	-45		5100		
R25	1006750-32		1000	2%	1/4 W
R26	1010369-152		39	5%	1/8 W
R27	1010369-1		47	5%	1/8 W
R28	1006750-65		24K	2%	1/4 W
R29	1006750-58		12K	2%	1/4 W
R30	1010369-92		300K	5%	1/8 W
R31	1006750-36		1500	5%	1/4 W
R32	1010369-105		1MEGO	5%	1/8 W
R33	1006750-62		18K	2%	1/4 W
R34	1006750-32		1000	2%	1/4 W
R35	1010604-34		1800	1%	1 W
R36	1006750-44		3300	2%	1/4 W
R37	-56		10K		
R38	-39		2000		
R39	-56		10K		
R40	-56		10K		
R41	-8		100		
R42	-77		75K		
R43	-36		1500		
R44	-56		10K		
R45	-44		3300		
R46	-65		10K		
R47	-65		24K		
R48	-32		1000		
R49	-24		470		
R50	-63		20K		
R51	-72		47K		
R52	-49		5100		
R53	1006750-32		1000	2%	1/4 W
R54	1010369-152		39	5%	1/8 W
R55	1010369-1		47	5%	1/8 W
R56	1006750-52		6800	2%	1/4 W
R57	-77		75K		
R58	-39		2000		
R59	-56		10K		
R60	-8		100		
R61	-56		10K		
R62	-56		10K		
R63	-65		24K		
R64	-32		1000		
R65	-24		470		
R66	-63		20K		
R67	-72		47K		
R68	-49		5100		
R69	1006750-32		1000	2%	1/4 W
R70	1010369-152		39	5%	1/8 W
R71	1010369-1		47	5%	1/8 W
R72	1006750-36		1500	2%	1/4 W
R73	-25		510		
R74	-25		510		
R75	-25		510		
R76	-25		510		
R77	-25		510		
R78	-25		510		
R79	-25		510		
R80	-25		510		
R81	-56		10K		
R82	-32		1000		
R83	-32		1000		
R84	-32		1000		
R85	-32		1000		
R86	-32		1000		
R87	-32		1000		
R88	-32		1000		
R89	-32		1000		
R90	-16		220		
R91	-16		220		
R92	-16		220		
R93	-16		220		
R94	-16		220		
R95	-16		220		
R96	-16		220		
R97	-16		220		
R98	-36		1500		
R99	-56		10K		
R100	-39		2000		
R101	-39		2000		
R102	1006750-39		2000	±2%	1/4 W
R103	1010604-16		750	±1%	1W
R104	1010604-16	RESISTOR	750	±1%	1W

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
C1	1006777-31	CAPACITOR	0.010	±10%	100 VDC
C2	1006755-10		4.7		10
C3	1006777-39		0.015		100
C4	1006755-69		1.0		35
C5	1006755-69		1.0		35
C6	1006755-33		1.5		20
C7	1006777-24		0.001		100
C8	1006755-21		2.2		15
C9	1006777-24		0.001		100
C10	1006777-10		680UUF		100
C11	1006777-23		820UUF		100
C12	1006755-69		1.0		35
C13	1006777-39		0.015		100
C14	1006755-69		1.0		35
C15	1006777-31		0.010		100
C16	1006755-69		1.0		35
C17	1006755-21		2.2		15
C18	1006777-24		0.001		100
C19	1006755-33		0.001		20
C20	1006777-24		0.001		100
C21	1006777-10		680UUF		100
C22	1006777-23		820UUF		100
C23	1006755-69		1.0		35
C24	1006755-69		1.0		35
C25	1006777-24		0.001		100
C26	1006777-24		0.001		100
C27	1006777-10		680UUF		100
C28	1006777-23		820UUF		100
C29	1006755-69		1.0		35
C30	1006755-79		6.8		35
C31	1006755-79		6.8		35
C32	1006755-133		18		50
C33	1006755-133	CAPACITOR	18	±10%	50VDC
CR1	1010385	DIODE	IN660		
CR2	1010372-12		IN660		
CR3	1010385		IN660		
CR4	1010385		IN660		
CR5	1010385		IN660		
CR6	1010372-12		IN660		
CR7	1010385		IN660		
CR8					
CR9					
CR10					
CR11	1010385		IN660		
CR12	1010385-9		IN660		
CR13	1010385		IN660		
CR14					
CR15					
CR16					
CR17					
CR18					
CR19					
CR20	1010385		IN660		
CR21	1010385-9	DIODE	IN660		
Q1	1010342	TRANSISTOR	2N998		
Q2	1010343-3		2N2980		
Q3	1010652-1		2N914		
Q4	1010966-1		2N914		
Q5	1010966-1		2N914		
Q6	1010966-1		2N914		
Q7	1010966-1		2N914		
Q8	1010342		2N998		
Q9	1010343-3		2N2980		
Q10	1010652-1		2N914		
Q11	1010343-3		2N914		
Q12	1010966-1		2N914		
Q13	1010966-1		2N914		
Q14	1010966-1		2N914		
Q15	1010966-1		2N914		
Q16	1010652-1		2N2980		
Q17	1010966-1		2N914		
Q18	1010966-1		2N914		
Q19	1010966-1		2N914		
Q20	1010966-1		2N914		
Q21	1010343-3		2N914		
Q22	1010966-1		2N914		
Q23					
Q24					
Q25					
Q26					
Q27					
Q28					
Q29	1010966-1		2N914		
Q30	1010343-3	TRANSISTOR	2N914		
T1	1006762-2	TRANSFORMER			
T2	1010275				
T3	1010275				
T4	1006762-2				
T5	1010275				
T6	1010275				
T7	1006762-2				
T8					
T9					
T10					
T11					
T12					
T13					
T14					
T15					
T16	1006762-2	TRANSFORMER			
C34	1006755-133	CAPACITOR	18	±10%	50VDC
C35	1006755-133	CAPACITOR	18	±10%	50VDC

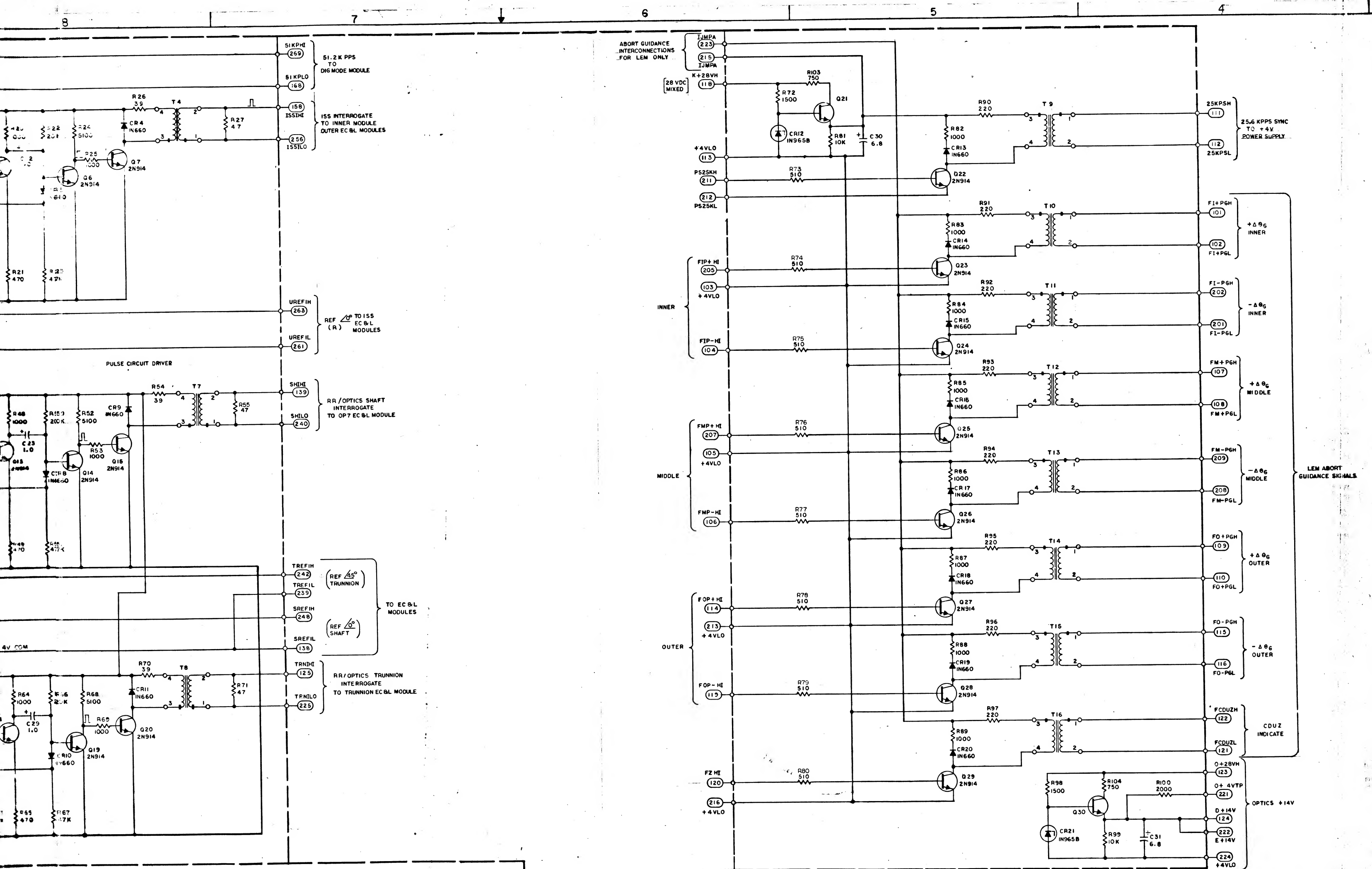
REF DRAWING:
INTERROGATE MODULE ASSY
DWG NO. 2007263

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	REV NO.
<div style="display: flex; justify-content: space-between;"> <div> <p>MIT INSTRUMENTATION LAB CAMBRIDGE, MASS</p> <p>DRAWN <i>A. D. De la Cruz</i> CHECKED <i>A. D. De la Cruz</i> APPROVED <i>A. D. De la Cruz</i></p> </div> <div> <p>MANNED SPACECRAFT CENTER HOUSTON, TEXAS</p> <p>SCHEMATIC, INTERROGATE MODULE (CDU)</p> <p>DRAWING NO. 2010080</p> </div> </div>				
<div style="display: flex; justify-content: space-between;"> <div> <p>APPROVED <i>W. J. De la Cruz</i> MIT</p> <p>APPROVED <i>W. J. De la Cruz</i> BSC</p> </div> <div> <p>CODE IDENT NO. 80230J</p> <p>SCALE</p> </div> <div> <p>SHEET 1 OF 1</p> </div> </div>				

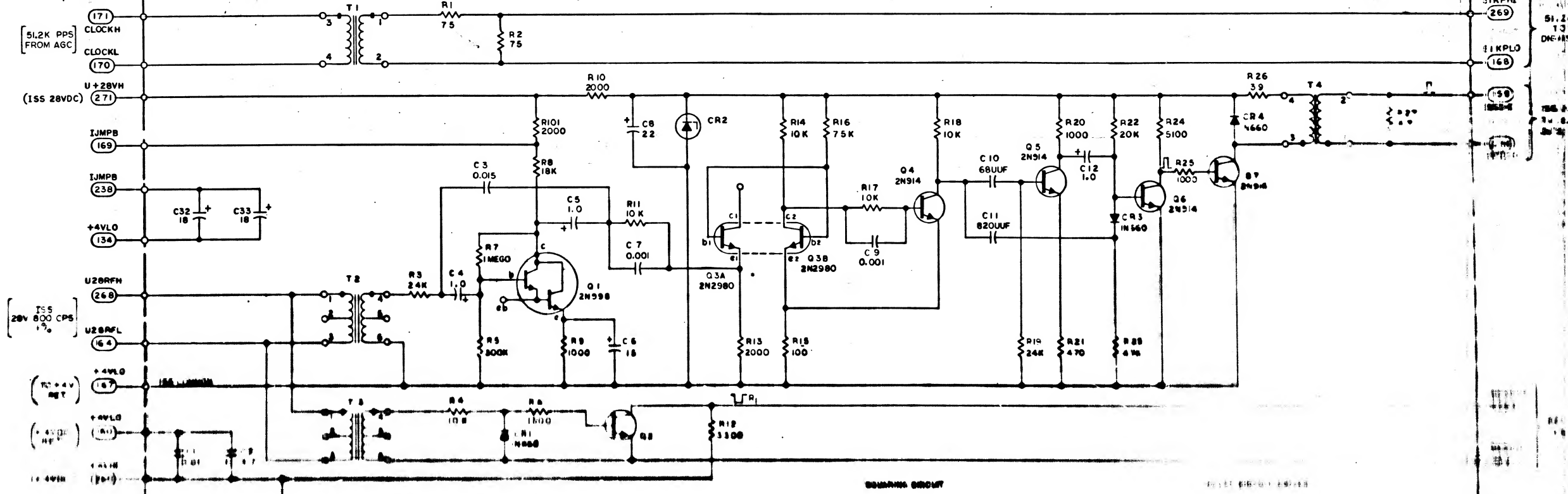
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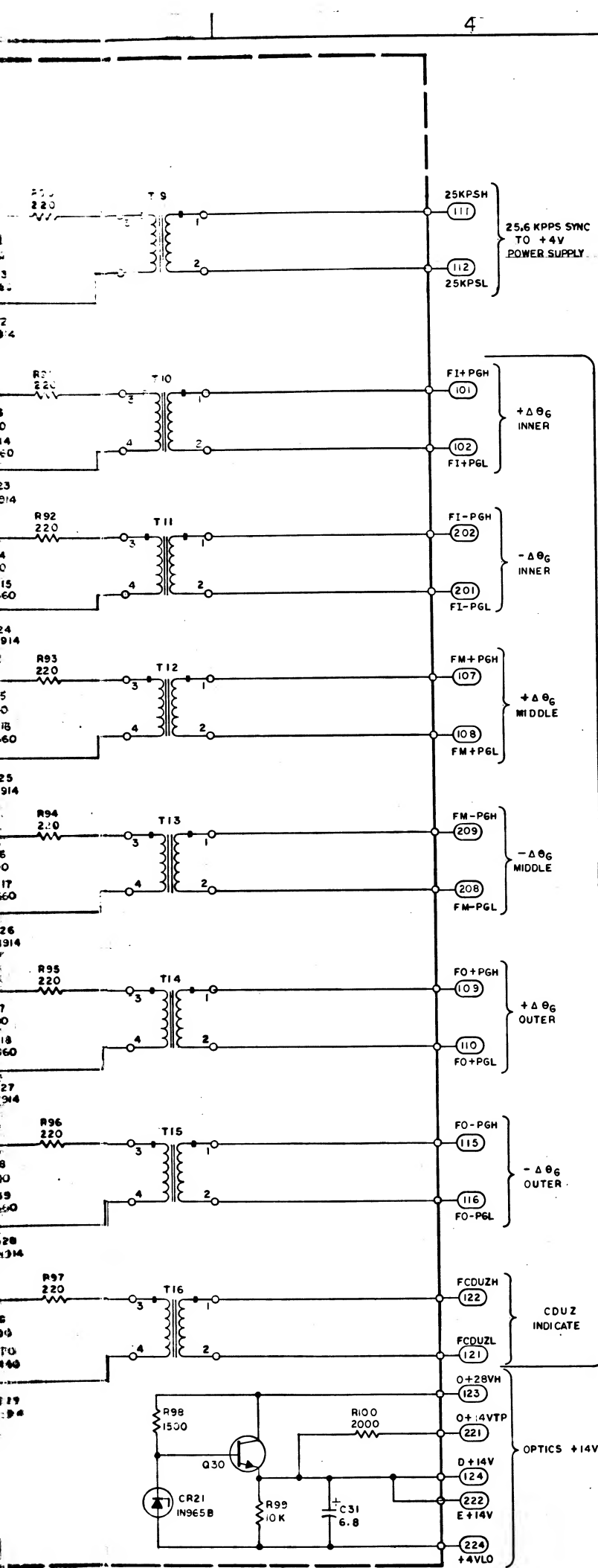
3H

2010080



51.2K PPS FROM AGC
CLOCKH
CLOCKL
U+28VH
(155 28VDC)
IJPB
IJPB
+4VLO
U28RFH
U28RFL
+4VLO
+4VLO
+4VLO
+4VLO





REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-5	RESISTOR	75	2%	1/4 W
R2	1006750-5		75	2%	1/4 W
R3	1006750-65		24K	2%	1/4 W
R4	1006750-56		10K	2%	1/4 W
R5	1010369-92		300K	5%	1/8 W
R6	1006750-36		1500	2%	1/4 W
R7	1010369-105		1MEG	5%	1/8 W
R8	1006750-63		20K	2%	1/4 W
R9	1006750-32		1000	2%	1/4 W
R10	1010604-39		2000	1%	1 W
R11	1006750-56		10K	2%	1/4 W
R12	-44		3300		
R13	-39		2000		
R14	-56		10K		
R15	-8		100		
R16	-77		75K		
R17	-56		10K		
R18	-56		10K		
R19	-56		24K		
R20	-32		470		
R21	-24		20K		
R22	-63		47K		
R23	-72		5100		
R24	-49		1000	2%	1/4 W
R25	1006750-32		39	5%	1/8 W
R26	1010369-152		47	5%	1/8 W
R27	1010369-1		24K	2%	1/4 W
R28	1006750-65		12K	2%	1/4 W
R29	1006750-58		300K	5%	1/8 W
R30	1010369-92		1500	2%	1/4 W
R31	1006750-36		1MEG	5%	1/8 W
R32	1010369-105		20K	2%	1/4 W
R33	1006750-63		1800	1%	1 W
R34	1006750-32		3300	2%	1/4 W
R35	1010604-34		10K		
R36	1006750-44		2000		
R37	-56		10K		
R38	-39		10K		
R39	-56		10K		
R40	-56		10K		
R41	-8		100		
R42	-77		75K		
R43	-36		1500		
R44	-56		10K		
R45	-44		3300		
R46	-56		10K		
R47	-65		24K		
R48	-32		1000		
R49	-24		470		
R50	-63		20K		
R51	-72		47K		
R52	-49		5100		
R53	1006750-32		1000	±2%	1/4 W
R54	1010369-152		39	±5%	1/8 W
R55	1010369-1		47	±5%	1/8 W
R56	1006750-52		6800	±2%	1/4 W
R57	-77		75K		
R58	-39		2000		
R59	-56		10K		
R60	-8		100		
R61	-56		10K		
R62	-56		10K		
R63	-65		24K		
R64	-32		1000		
R65	-24		470		
R66	-63		20K		
R67	-72		47K		
R68	-49		5100		
R69	1006750-32		1000	±2%	1/4 W
R70	1010369-152		39	±5%	1/8 W
R71	1010369-1		47	±5%	1/8 W
R72	1006750-56		1500	±2%	1/4 W
R73	-25		510		
R74	-25		510		
R75	-25		510		
R76	-25		510		
R77	-25		510		
R78	-25		510		
R79	-25		510		
R80	-25		510		
R81	-56		10K		
R82	-32		1000		
R83	-32		1000		
R84	-32		1000		
R85	-32		1000		
R86	-32		1000		
R87	-32		1000		
R88	-32		1000		
R89	-32		1000		
R90	-16		220		
R91	-16		220		
R92	-16		220		
R93	-16		220		
R94	-16		220		
R95	-16		220		
R96	-16		220		
R97	-16		220		
R98	-36		1500		
R99	-56		10K		
R100	1006750-39	RESISTOR	2000	±2%	1/4 W

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
C1	1006777-31	CAPACITOR	0.010	±10%	100VDC
C2	1006755-10		4.7		10
C3	1006777-39		0.015		100
C4	1006755-69		1.0		35
C5	1006755-69		1.0		35
C6	1006755-33		1.5		20
C7	1006777-24		0.001		100
C8	1006755-21		2.2		15
C9	1006777-24		0.001		100
C10	1006777-10		680UUF		100
C11	1006777-23		820UUF		100
C12	1006755-69		1.0		35
C13	1006777-39		0.015		100
C14	1006755-69		1.0		35
C15	1006777-31		0.010		100
C16	1006755-69		1.0		35
C17	1006755-21		2.2		15
C18	1006777-24		0.001		100
C19	1006755-33		1.5		20
C20	1006777-24		0.001		100
C21	1006777-10		680UUF		100
C22	1006777-23		820UUF		100
C23	1006755-69		1.0		35
C24	1006755-69		1.0		35
C25	1006777-24		0.001		100
C26	1006777-24		0.001		100
C27	1006777-10		680UUF		100
C28	1006777-23		820UUF		100
C29	1006755-69		1.0		35
C30	1006755-79	CAPACITOR	6.8	±10%	35 VDC
C31	1006755-79				
CR1	1010385	DIODE	IN660		
CR2	1010372-12		IN660		
CR3	1010385		IN660		
CR4	1010385		IN660		
CR5	1010385		IN660		
CR6	1010372-12		IN660		
CR7	1010385		IN660		
CR8					
CR9					
CR10					
CR11	1010385		IN660		
CR12	1010385-9		IN660		
CR13	1010385		IN660		
CR14					
CR15					
CR16					
CR17					
CR18					
CR19					
CR20	1010385		IN660		
CR21	1010385-9	DIODE	IN660		
Q1	1010342	TRANSISTOR	2N998		
Q2	1010343-3		2N2980		
Q3	1010652-1		2N914		
Q4	1006752		2N914		
Q5	1006752		2N914		
Q6	1006752		2N914		
Q7	1006752		2N914		
Q8	1010342		2N998		
Q9	1010343-3		2N2980		
Q10	1010652-1		2N914		
Q11	1010343-3		2N914		
Q12	1006752		2N914		
Q13	1006752		2N914		
Q14	1006752		2N914		
Q15	1006752		2N914		
Q16	1010652-1		2N2980		
Q17	1006752		2N914		
Q18	1006752		2N914		
Q19	1006752		2N914		
Q20	1006752		2N914		
Q21	1010343-3		2N914		
Q22	1006752		2N914		
Q23					
Q24					
Q25					
Q26					
Q27					
Q28					
Q29	1006752	TRANSISTOR	2N914		
Q30	1010343-3				
T1	1006762-2	TRANSFORMER			
T2	1010275				
T3	1010275				
T4	1006762-2				
T5	1010275				
T6	1010275				
T7	1006762-2				
T8					
T9					
T10					
T11					
T12					
T13					
T14					
T15					
T16	1006762-2	TRANSFORMER			

REF DRAWING:
INTERROGATE MODULE ASSY
DWG NO. 2007263

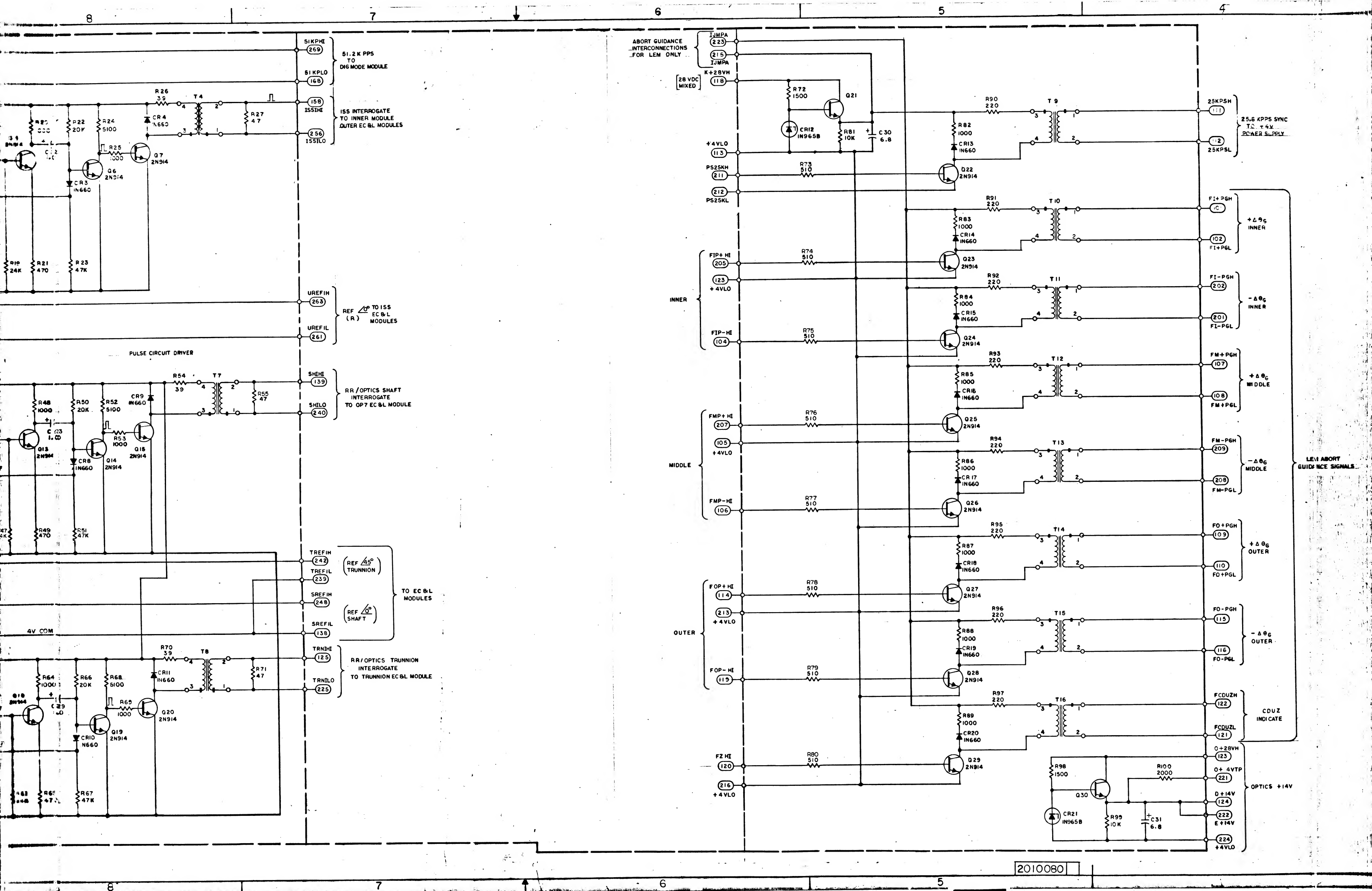
QTY	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	REV																																
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MATERIAL		LIST OF MATERIALS																																		
INSTRUMENTATION LAB		MANNED SPACECRAFT CENTER																																		
HONOLULU, HAWAII		HOUSTON, TEXAS																																		
DRAWN: <i>[Signature]</i>		CHECKED: <i>[Signature]</i>																																		
APPROVED: <i>[Signature]</i>		APPROVED: <i>[Signature]</i>																																		
MATERIAL		SCALE																																		
NEXT REV		USED ON																																		
APPLICATION		DATE																																		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES DO NOT SCALE THIS DRAWING		SCHEMATIC INTERROGATE MODULE (CDU)																																		
APPROVED: <i>[Signature]</i> DATE: 80230J		DRAWING NO. 2010080																																		

2010080

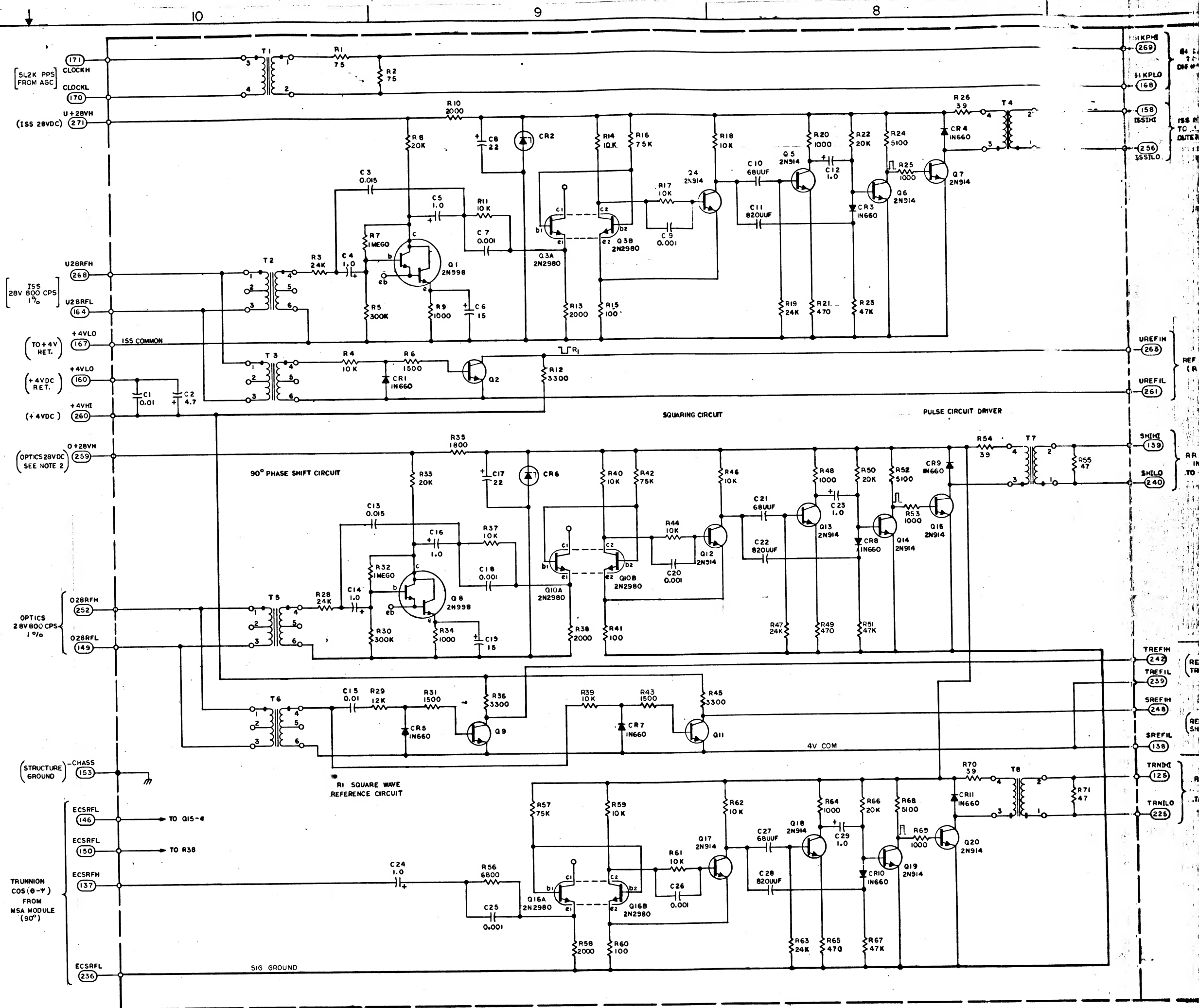
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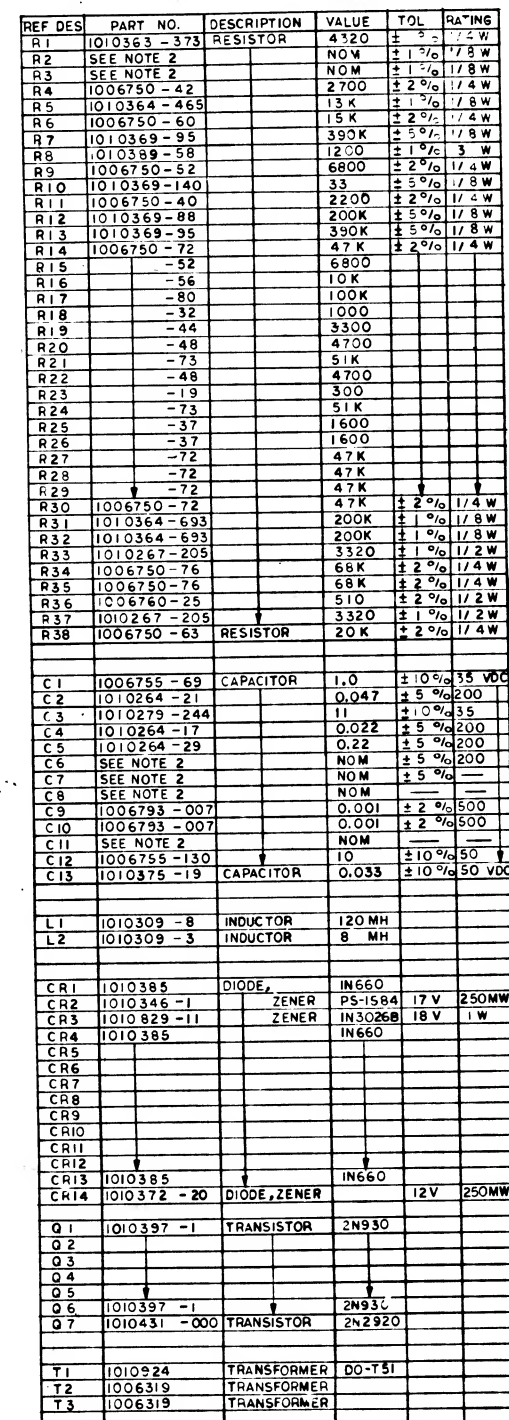
3H





- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. PIN CALLOUTS ARE WIREWRAP PROGRAM DESIGNATIONS





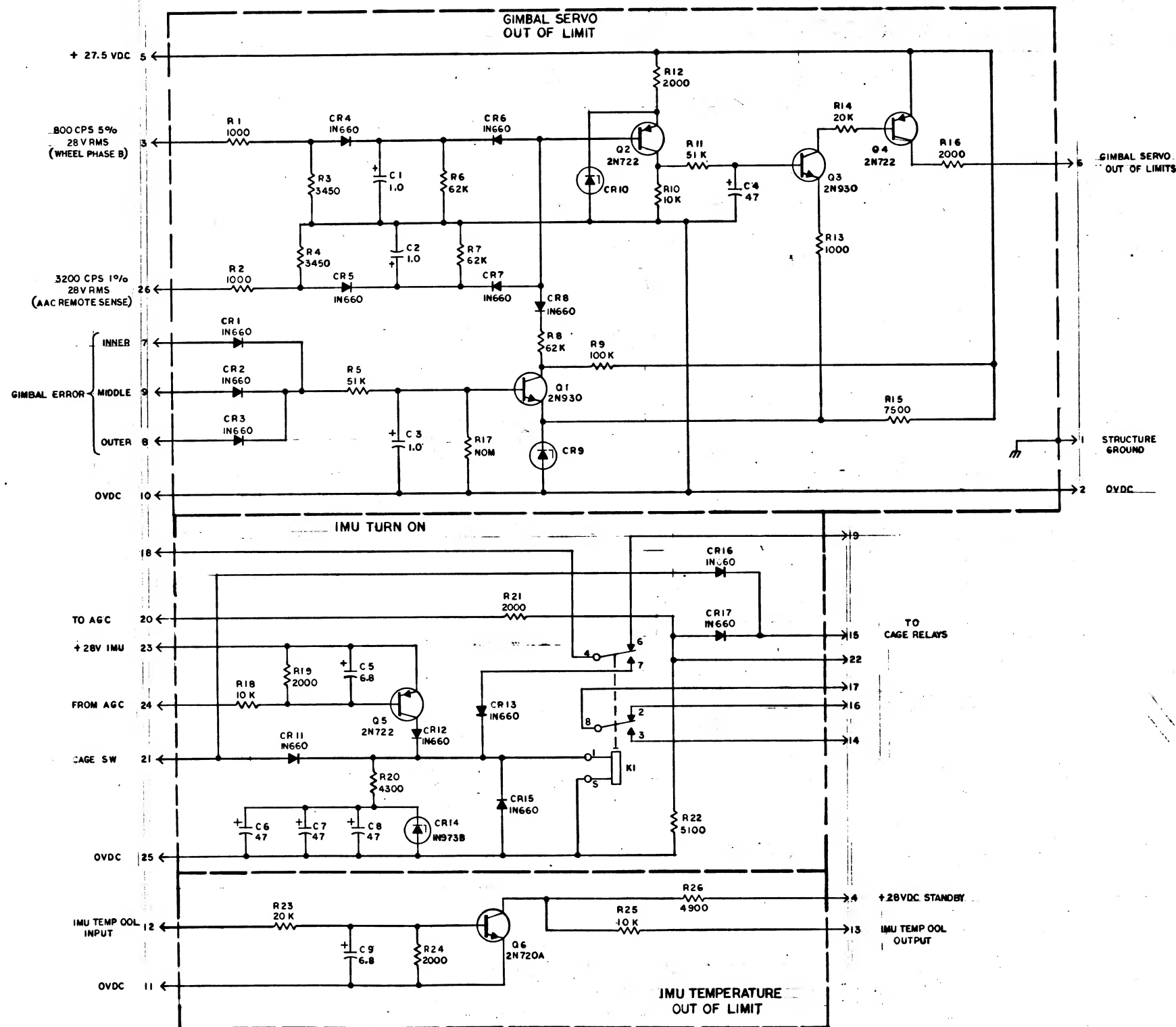
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PART NO.		VALUE	PART NO.		VALUE
1010364	-337	2800	1010364	-565	432 K
	-339	2870		-569	455 K
	-341	2940		-575	485 K
	-343	3010		-581	523 K
	-345	3090		-587	566 K
	-347	3160		-593	604 K
	-349	3240		-599	649 K
	-351	3320		-607	715 K
	-353	3400		-615	787 K
	-355	3480		-625	867 K
	-357	3570		-635	100 K
	-359	3650		-647	115 K
	-361	3740		-657	137 K
	-363	3830		-669	159 K
	-365	3920		-699	215 K
	-699	4120		-727	301 K
	-373	4320	1010364	-769	499 K
	-377	4530			
1010364	-381	4750			

C 6		C8 & C11			
PART NO.	VALUE	PART NO.	VALUE	TOL.	RATING
1010264 - 21	0.047	1010410 - 2	24.0	PF ± 2 %	500VDC
- 22	0.056	- 3	2.0		
- 23	0.068	- 4	3.00		
- 24	0.082	- 5	3.30		
1010264 - 25	0.100	- 6	3.60		
		- 7	3.90		
		- 8	4.30		
		- 9	4.70		
		-10	5.10		500VDC
		-11	5.60		300V0
		-12	6.20		
		-13	6.80		
		-14	7.50		
		-15	8.20		
		-16	9.10		
		1010410 -17	10.0	PF ± 2 %	300VDC
PART NO.	VALUE				
1010264 - 92	0.0039				
- 85	0.0068				
- 86	0.0082				
- 87	0.010				
- 88	0.012				
- 89	0.015				
1010264 - 50	0.018				

REF DWG:
- AAC FILTER & MULTIVIBRATOR ASSY.
3200 CPS
DWG. NO. 2007109

- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. SELECT R2, R3, C6, C7, C8 & C11 PER APPLICABLE PS FROM APPROPRIATE CHART
 3. CONNECT 3300 CPS I/O TO OVDC AT ONE POINT ONLY AS SHOWN

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μ F RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ± ± ± DO NOT SCALE THIS DRAWING	M I T INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
	DRAWN <i>P. D. Lee</i> 2/2/68	DATE <i>2/2/68</i>	SCHEMATIC		
	CHECKED <i>A. Brown</i> 2/2/68	APPROVED <i>A. Brown</i> 2/2/68	AAC, FILTER & MULTIVIBRATOR		
	APPROVED <i>E. Smith</i> 2/2/68	DATE <i>2/2/68</i>	3200CPS		
MATERIAL	APPROVED M I T <i>W. Lee</i> 2/2/68		CODE IDENT NO.	SIZE	DRAWING NO.
NEXT ASSY	USED ON	APPROVED BSC <i>W. Lee</i> 2/2/68	80230	E	2010081
APPLICATION		DATE	SCALE	SHEET	OF



- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. SELECT R17 PER APPLICABLE P.S. FROM APPROPRIATE CHART

R17	VALUE
1010369 - 95	330 K
- 94	360 K
- 93	390 K
- 92	430 K
- 91	470 K
- 90	510 K
- 89	560 K
- 88	620 K
- 87	680 K
- 86	750 K
- 85	820 K
- 84	910 K
- 83	1 MEG
1010369 - 106	1.1 MEG

CIRCUIT TITLE	SIGNATURE
GIMBAL SERVO OUT OF LIMIT	<i>[Signature]</i>
IMU TURN ON	<i>[Signature]</i>
IMU TEMPERATURE OUT OF LIMIT	<i>[Signature]</i>

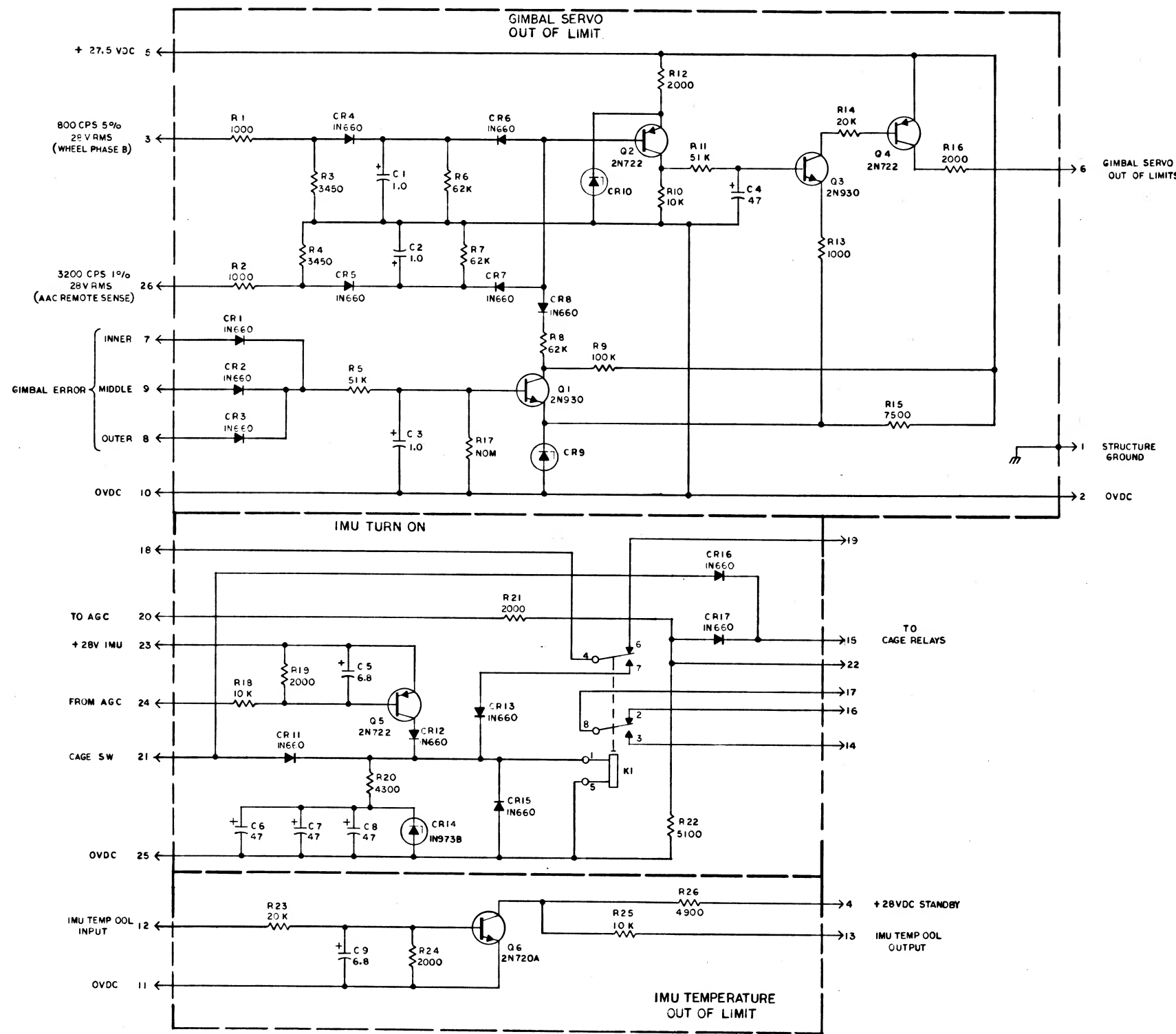
REF DWG:
IMU AUXILIARY ASSY
DWG NO. 2007117

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	PRD NO.
LIST OF MATERIALS				
Manned Spacecraft Center Houston, Texas				
SCHEMATIC IMU AUXILIARY				
DRAWING NO. 2010082				
SHEET 1 OF 1				

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-32	RESISTOR	1000	±2%	1/4 W
R2	-32		1000		
R3	-128		3450		
R4	-128		3450		
R5	-73		51K		
R6	-75		62K		
R7	-75		62K		
R8	-75		62K		
R9	-80		100K		
R10	-56		10 K		
R11	1006750-73		51K		1/4 W
R12	1006760-39		2000		1/2 W
R13	1006750-32		1000		1/4 W
R14	1006750-63		20K		1/4 W
R15	1006750-53		7500		1/4 W
R16	1006760-39		2000	±2%	1/2 W
R17	SEE NOTE 2		NOM	±5%	1/8 W
R18	1006750-56		10K	±2%	1/4 W
R19	-39		2000		
R20	-47		4300		
R21	-39		2000		
R22	-49		5100		
R23	-63		20K		
R24	-39		2000		
R25	-56		10K		
R26	1006750-132	RESISTOR	4900	±2%	1/4 W
C1	1006755-118	CAPACITOR	1.0	±10%	50VDC
C2	-118		1.0		50
C3	-118		1.0		50
C4	-89		47		35
C5	-79		6.8		
C6	-89		47		
C7	-89		47		
C8	-89		47		
C9	1006755-79	CAPACITOR	6.8	±10%	35VDC
CR1	1010385	DIODE	IN660		
CR2					
CR3					
CR4					
CR5					
CR6					
CR7					
CR8	1010385		IN660		
CR9	1010372-11	ZENER	IN965B		
CR10	1010830-9	ZENER	IN965B		
CR11	1010385		IN660		
CR12	1010385		IN660		
CR13	1010385		IN660		
CR14	1010830-17	ZENER	IN973B		
CR15	1010385		IN660		
CR16	1010385		IN660		
CR17	1010385	DIODE	IN660		
Q1	1010397-1	TRANSISTOR	2N930		
Q2	1010285		2N722		
Q3	1010397-1		2N930		
Q4	1010285		2N722		
Q5	1010285		2N722		
Q6	1010357-1	TRANSISTOR	2N720A		
K1	1010353-7	RELAY			

MASTER

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SELECT R17 PER APPLICABLE P.S. FROM APPROPRIATE CHART



REV	ZONE	DESCRIPTION	REVISIONS	DATE	APPROVED
A		REVISED PER DARR 22808	1	11/11/66	CP
B		REVISED PER DARR 28194	2	11/11/66	CP

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-32	RESISTOR	1000	±2%	1/4 W
R2	-32		1000		
R3	-128		3450		
R4	-128		3450		
R5	-73		51K		
R6	-75		62K		
R7	-75		62K		
R8	-75		62K		
R9	-80		10K		
R10	-56		10K		
R11	1006750-73		51K		1/4 W
R12	1006750-39		2000		1/2 W
R13	1006750-32		1000		1/4 W
R14	1006750-63		20K		1/4 W
R15	1006750-53		7500		1/4 W
R16	1006750-39		2000	±2%	1/2 W
R17	SEE NOTE 2		NOM	±5%	1/8 W
R18	1006750-56		10K	±2%	1/4 W
R19	-39		2000		
R20	-47		4300		
R21	-39		2000		
R22	-49		5100		
R23	-63		20K		
R24	-39		2000		
R25	-56		10K		
R26	1006750-132	RESISTOR	4900	±2%	1/4 W
C1	1006755-118	CAPACITOR	1.0	±10%	50VDC
C2	-118		1.0		50
C3	-118		1.0		50
C4	-69		47		35
C5	-79		6.8		
C6	-89		47		
C7	-89		47		
C8	-89		47		
C9	1006755-79	CAPACITOR	6.8	±10%	35VDC
CR1	1010385	DIODE	IN660		
CR2					
CR3					
CR4					
CR5					
CR6					
CR7	1010385		IN660		
CR8	1010372-11	ZENER	IN965B		
CR9	1008815-9	ZENER	IN965B		
CR10	1010385		IN660		
CR11	1010385		IN660		
CR12	1010385		IN660		
CR13	1010385		IN660		
CR14	1008815-17	ZENER	N973B		
CR15	1010385		IN660		
CR16	1010385		IN660		
CR17	1010385	DIODE	IN660		
Q1	1010397-1	TRANSISTOR	2N930		
Q2	1010285		2N722		
Q3	1010397-1		2N930		
Q4	1010285		2N722		
Q5	1010285		2N722		
Q6	1010357-1	TRANSISTOR	2N720A		
K1	1010355-7	RELAY			

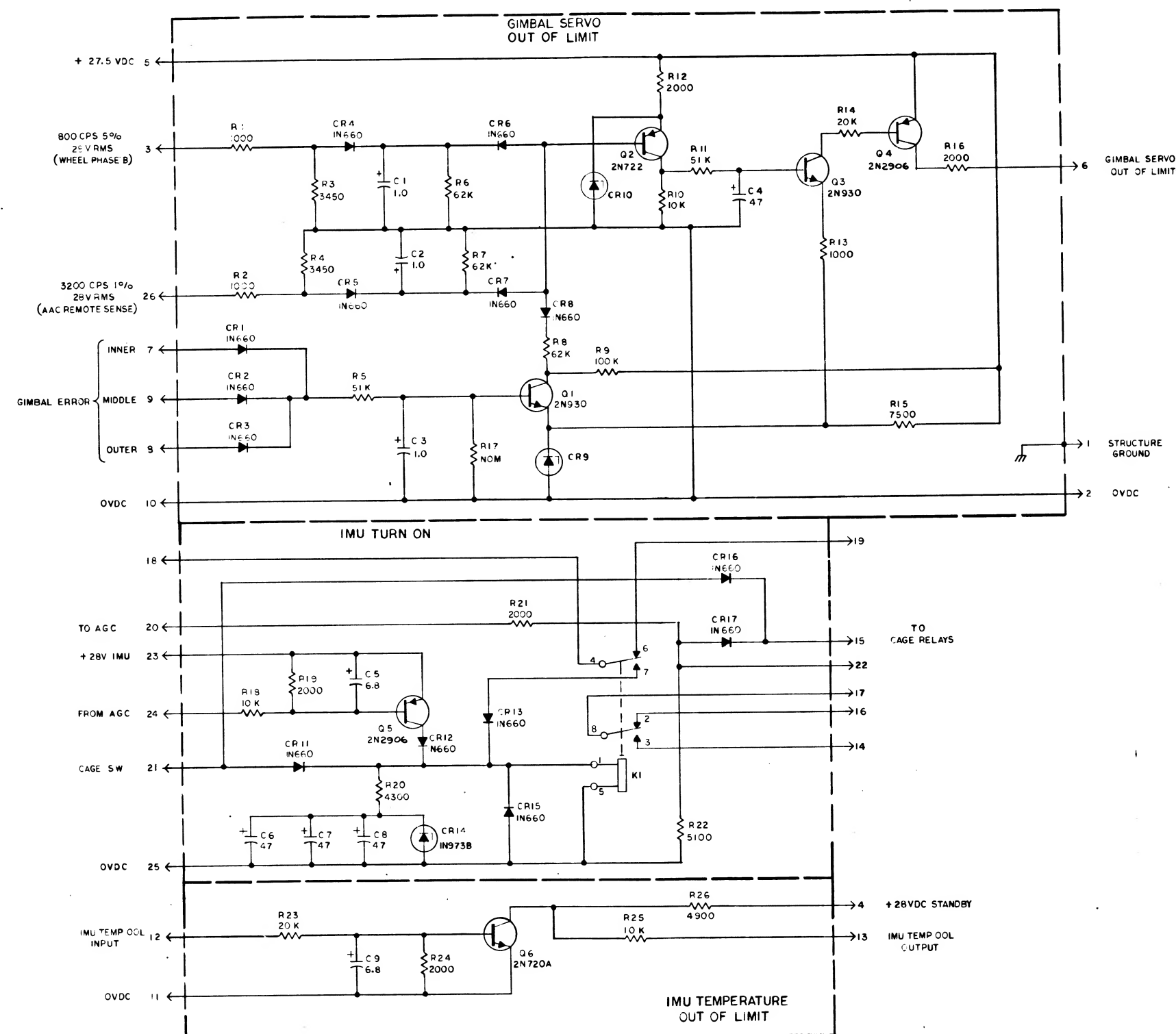
R 17		
PART NO.		VALUE
1010369	- 93	330 K
	- 94	360 K
	- 95	390 K
	- 96	430 K
	- 97	470 K
	- 98	510 K
	- 99	560 K
	- 100	620 K
	- 101	680 K
	- 102	750 K
	- 103	820 K
	- 104	910 K
	- 105	1 MEG
1010369	- 106	1.1 MEG

CIRCUIT TITLE	SIGNATURE
GIMBAL SERVO OUT OF LIMIT	
IMU TURN ON	
IMU TEMPERATURE OUT OF LIMIT	

REF DWG: IMU AUXILIARY ASSY
DWG NO. 2007117

QTY	RECD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION
<div style="display: flex; justify-content: space-between;"> <div> <p>MIT INSTRUMENTATION LAB</p> <p>DRAWN: <i>[Signature]</i></p> <p>CHECKED: <i>[Signature]</i></p> <p>APPROVED: <i>[Signature]</i></p> </div> <div> <p>LIST OF MATERIALS</p> <p>MANNED SPACECRAFT CENTER</p> <p>HOUSTON, TEXAS</p> <p>SCHEMATIC</p> <p>IMU AUXILIARY</p> </div> </div>				
<p>APPROVED: <i>[Signature]</i></p> <p>DATE: <i>[Date]</i></p>		<p>CODE IDENT NO: 80230</p> <p>SIZE: E</p> <p>DRAWING NO: 2010082</p> <p>SHEET 1 OF 1</p>		

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-32	RESISTOR	100K	±2%	4 W
R2	-32		100K		
R3	-128		3450		
R4	-128		3450		
R5	-73		51K		
R6	-75		62K		
R7	-75		62K		
R8	-75		62K		
R9	-80		100K		
R10	-56		10 K		
R11	1006750-73		51K		1/4 W
R12	1006750-39		2000		1/2 W
R13	1006750-32		100K		1/4 W
R14	1006750-63		20K		1/4 W
R15	1006750-53		7500		1/4 W
R16	1006760-39		200	±2%	1/2 W
R17	SEE NOTE 2		MCM	±5%	1/8 W
R18	1006750-56		10K	±2%	1/4 W
R19	-33		2000		
R20	-47		430K		
R21	-39		2000		
R22	-49		5100		
R23	-63		20K		
R24	-39		2000		
R25	-56		10K		
R26	1006750-132	RESISTOR	4900	±2%	1/4 W
C1	1006755-118	CAPACITOR	1.0	±10%	50VDC
C2	-118		1.0	50	
C3	-118		1.0	50	
C4	-89		4.7	35	
C5	-79		6.3		
C6	-89		4.7		
C7	-89		4.7		
C8	-89		4.7		
C9	1006755-79	CAPACITOR	5.8	±10%	35 VDC
CR1	1010385	DIODE	IN660		
CR2					
CR3					
CR4					
CR5					
CR6					
CR7					
CR8	1010385		IN660		
CR9	1010372-11	ZENER			
CR10	1008815-5	ZENER	IN965B		
CR11	1010385		IN660		
CR12	1010385		IN660		
CR13	1010385		IN660		
CR14	1008815-17	ZENER	IN973B		
CR15	1010385		IN660		
CR16	1010385		IN660		
CR17	1010385	DIODE	IN660		
Q1	1010397-1	TRANSISTOR	2N930		
Q2	1010285		2N722		
Q3	1010397-1		2N931		
Q4	1008814-1		2N2906		
Q5	1008814-1		2N2906		
Q6	1010357-1	TRANSISTOR	2N722A		
K1	1010351-7	DISPLAY			



R17		
PART NO.	VALUE	
1010369 - 93	330 K	
- 94	260 K	
- 95	390 K	
- 96	430 K	
- 97	470 K	
- 98	510 K	
- 99	560 K	
- 100	620 K	
- 101	680 K	
- 102	750 K	
- 103	820 K	
- 104	910 K	
- 105	IMEG	
1010369 - 106	IMEG	

CIRCUIT TITLE	SIGNATURE
GIMBAL SERVO OUT OF LIMIT	A. Kanner 12/1
IMU TURN ON	12/1
IMU TEMPERATURE OUT OF LIMIT	1/1

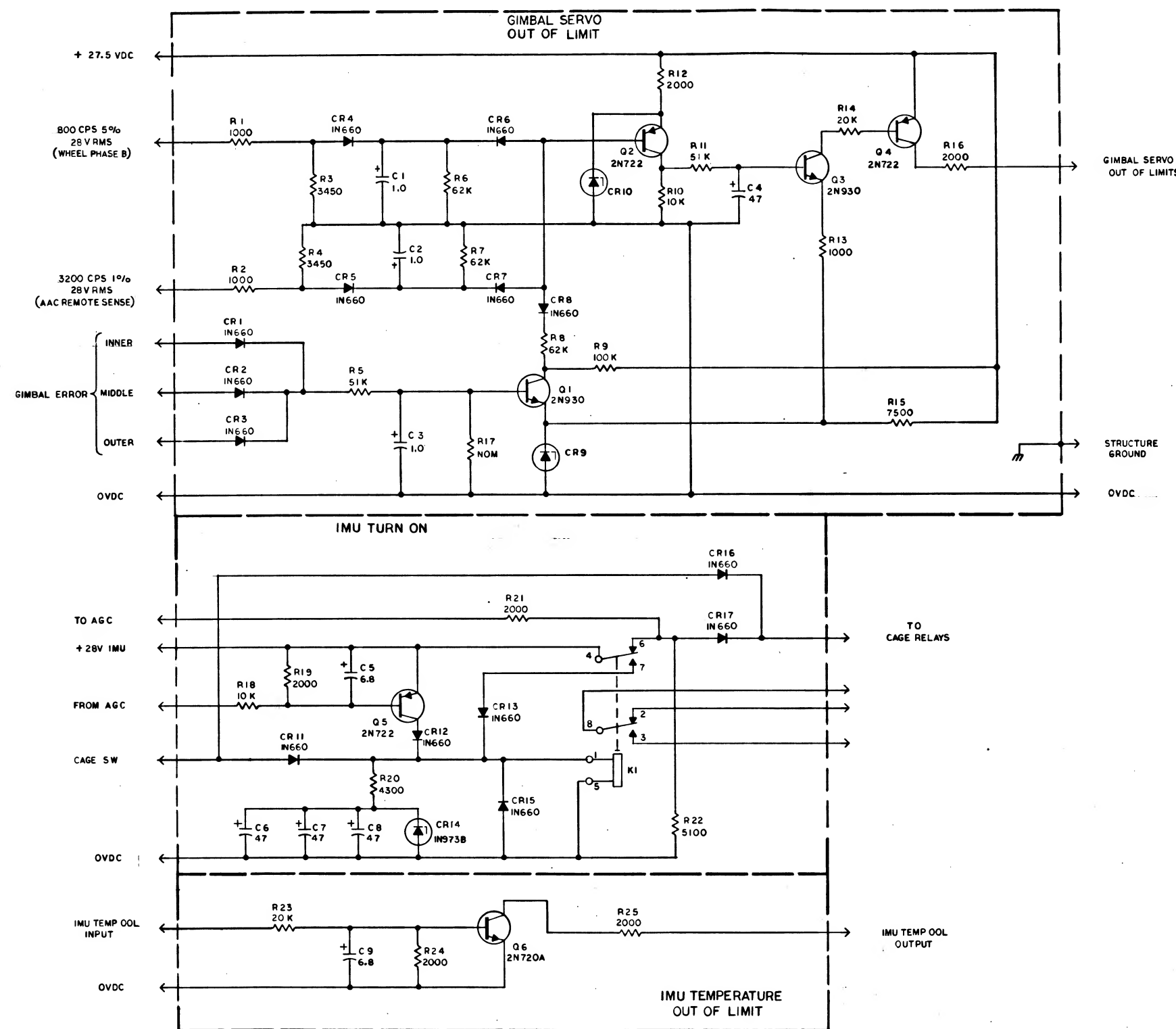
REF DWG:
IMU AUXILIARY ASS
DWG NO. 2007117

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIN. NO.
LIST OF MATERIALS				
SPECIFIED INCHES USE IN PT OF IN CRAMS	M I T INSTRUMENTATION LAB CAMBRIDGE MASS		MANNED SPACECRAFT CENTER HOUSTON TEXAS	
DRAWN BY <i>E. B. S.</i>	CHECKED <i>J. E. S.</i>	SCHEMATIC		
APPROVED <i>SEE ABOVE</i>	APPROVED <i>SEE ABOVE</i>	IMU AUXILIARY		
APPROVED M I T <i>[Signature]</i>	COC. IDENT NO. <i>80230</i>	SIZE E	DRAWING NO. 2100082	
APPROVED M O C <i>[Signature]</i>	SCALE	SHEET <i>1</i> OF <i>1</i>		

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SELECT R7 PER APPLICABLE P.S. FROM APPROPRIATE CHART

NOTES: 1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327 2. SELECT R17 PER APPLICABLE P.S. FROM APPROPRIATE CHART



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-32	RESISTOR	1000	±2%	4 W
R2	-32		1000		
R3	-128		3450		
R4	-128		3450		
R5	-73		51K		
R6	-75		62K		
R7	-75		62K		
R8	-75		62K		
R9	-80		100K		
R10	-56		10 K		
R11	1006750-73		51K		1/4 W
R12	1006760-39		2000		1/2 W
R13	1006750-32		1000		1/4 W
R14	1006750-53		20K		1/4 W
R15	1006750-53		7500		1/4 W
R16	1006760-39		2000	±2%	1/2 W
R17	SEE NOTE 2		NOM	±5%	1/8 W
R18	1006750-56		10K	±2%	1/4 W
R19	-39		2000		
R20	-47		4300		
R21	-39		2000		
R22	-49		5100		
R23	-63		20K		
R24	-39		2000		
R25	1006750-39	RESISTOR	2000	±2%	1/4 W
C1	1006755-118	CAPACITOR	1.0	±10%	50VDC
C2	-118		1.0		50
C3	-118		1.0		50
C4	-89		4.7		35
C5	-79		6.8		
C6	-89		4.7		
C7	-89		4.7		
C8	-89		4.7		
C9	1006755-79	CAPACITOR	6.8	±10%	35VDC
CR1	1010385	DIODE	IN660		
CR2					
CR3					
CR4					
CR5					
CR6					
CR7					
CR8	1010385		IN660		
CR9	1010372-11	ZENER	IN965B		
CR10	1010830-9	ZENER	IN660		
CR11	1010385		IN660		
CR12	1010385		IN660		
CR13	1010385		IN660		
CR14	1010830-17	ZENER	IN973B		
CR15	1010385		IN660		
CR16	1010385		IN660		
CR17	1010385	DIODE	IN660		
Q1	1010397-1	TRANSISTOR	2N930		
Q2	1010285		2N722		
Q3	1010397-1		2N930		
Q4	1010285		2N722		
Q5	1010285		2N722		
Q6	1010357-1	TRANSISTOR	2N720A		
K1	1010353-7	RELAY			

NOTES: 1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327 2. SELECT R17 PER APPLICABLE P.S. FROM APPROPRIATE CHART

R17	VALUE
1010369-93	330 K
-94	360 K
-95	390 K
-96	430 K
-97	470 K
-98	510 K
-99	560 K
-100	620 K
-101	680 K
-102	750 K
-103	820 K
-104	910 K
-105	1 MEG
1010369-106	1.1 MEG

CIRCUIT TITLE: GIMBAL SERVO OUT OF LIMIT, IMU TURN ON, IMU TEMPERATURE OUT OF LIMIT. SIGNATURE: [Signature]

REF DWG: IMU AUXILIARY ASSY, DWG NO. 2007117

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	PRD NO.
LIST OF MATERIALS				
MIT INSTRUMENTATION LAB				
MANNED SPACECRAFT CENTER HOUSTON, TEXAS				
SCHEMATIC IMU AUXILIARY				
DRAWING NO. 2010082				
DATE 8/2/79				
SHEET 1 OF 1				

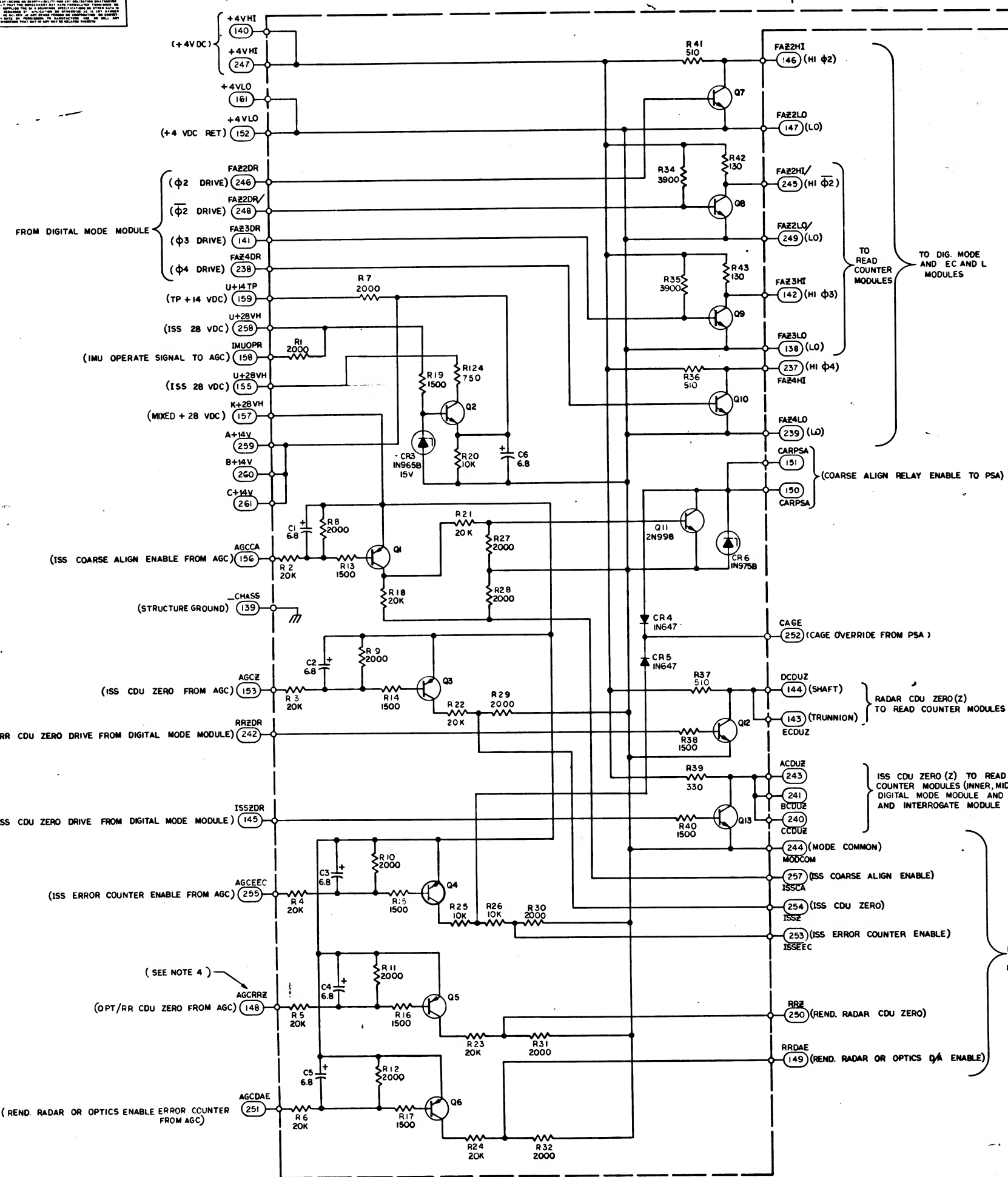
10 9 8 7

D

C

B

A

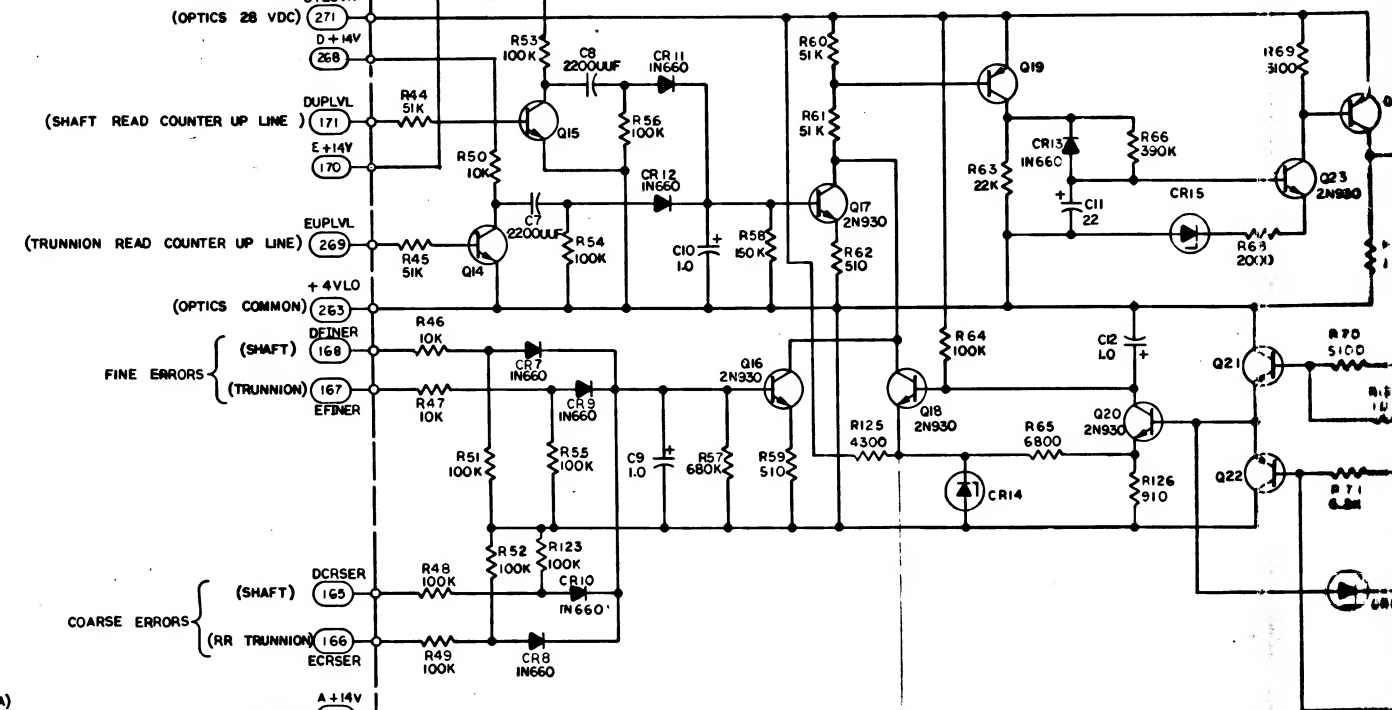


- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
 2. RESISTOR VALUES ARE IN OHMS
 3. CAPACITOR VALUES ARE IN MICROFARADS, UNLESS OTHERWISE SPECIFIED
 4. WIREWRAP PROGRAM PIN DESIGNATIONS ARE LABELED ABOVE PIN NUMBERS

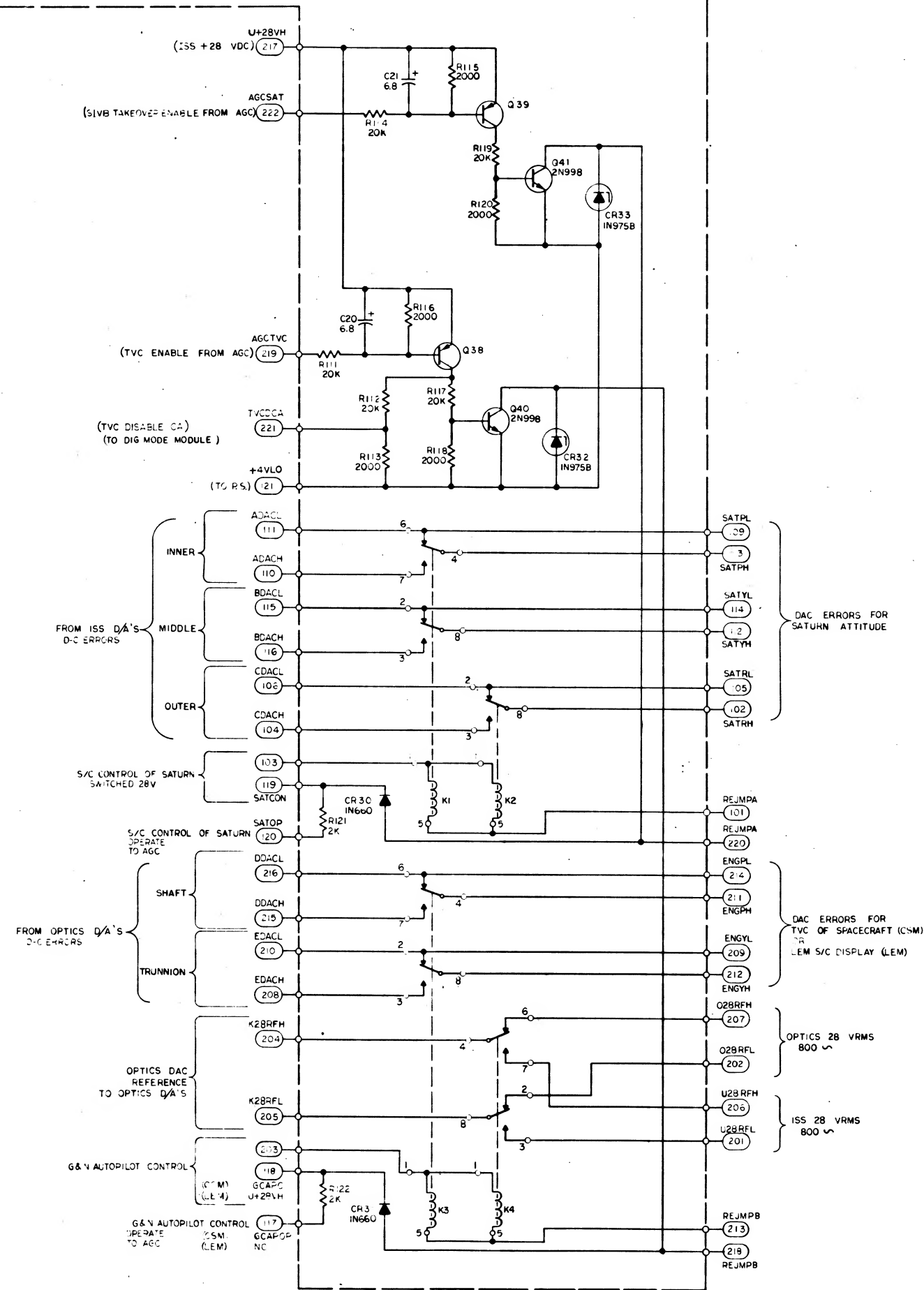
2010084

SMT A

R.R./OPTICS CDU FAIL DETECT CIRCUIT



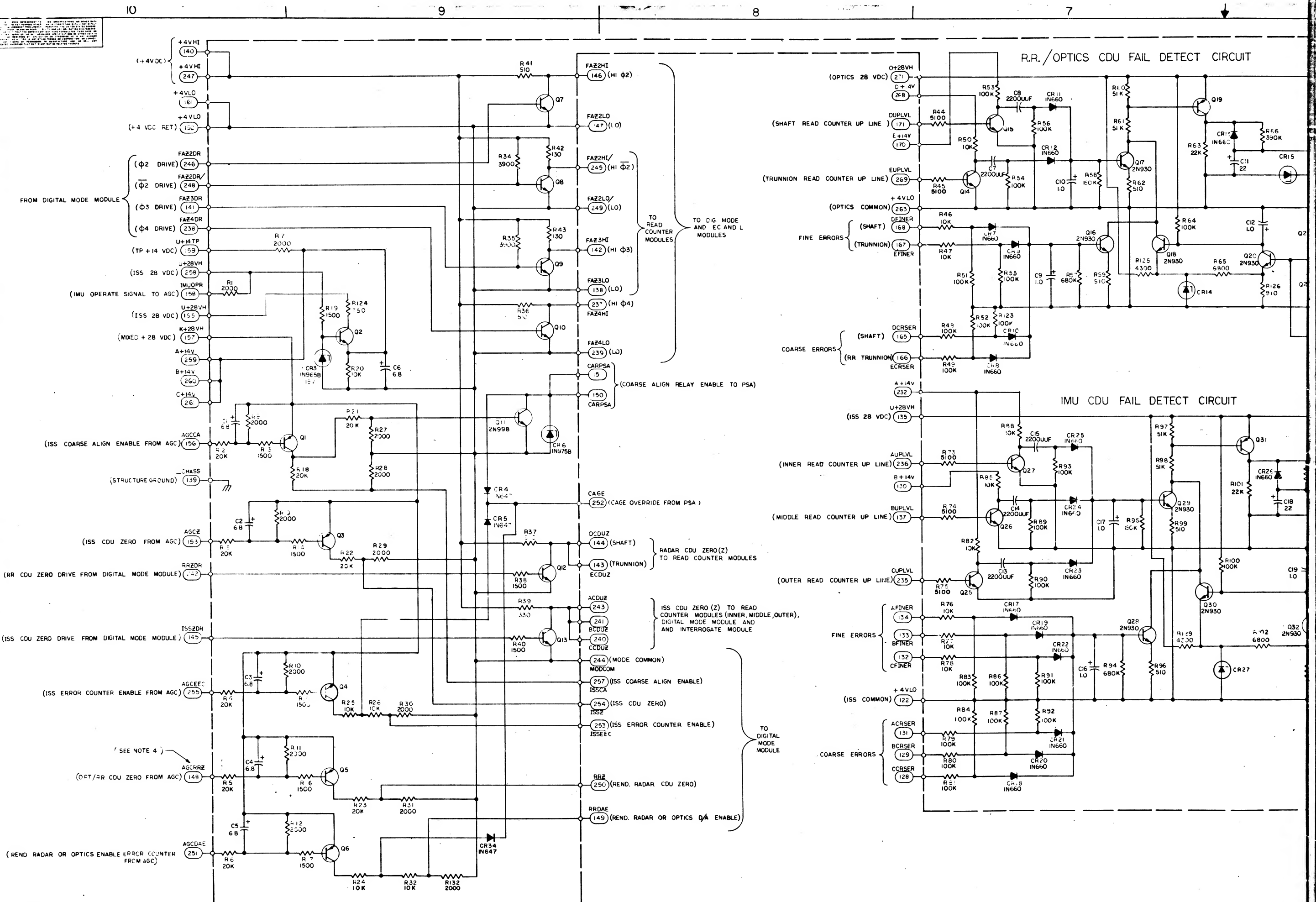
UJ FAIL DETECT CIRCUIT



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1006750 - 39	RESISTOR	200Ω	±2%	1/4 W
R2	- 63		20K		
R3	- 63		20K		
R4	- 63		20K		
R5	- 63		25K		
R6	- 63		20K		
R7	- 39		200Ω		
R8	- 39		200Ω		
R9	- 39		200Ω		
R10	- 39		200Ω		
R11	- 39		200Ω		
R12	- 39		200Ω		
R13	- 36		150Ω		
R14	- 36		150Ω		
R15	- 36		150Ω		
R16	- 36		150Ω		
R17	- 36		150Ω		
R18	- 63		20K		
R19	- 36		150Ω		
R20	- 56		10K		
R21	- 63		20K		
R22	- 63		20K		
R23	- 63		20K		
R24	- 56		10 K		
R25	- 56		10 K		
R26	- 56		10 K		
R27	- 39		200Ω		
R28	- 39		200Ω		
R29	- 39		200Ω		
R30	- 39		200Ω		
R31	- 39		200Ω		
R32	- 56		10 K		
R33	- 36		150Ω		
R34	- 41		330Ω		
R35	- 41		51Ω		
R36	- 25		51Ω		
R37	- 25		51Ω		
R38	- 36		150Ω		
R39	- 25		51Ω		
R40	- 36		150Ω		
R41	- 25		51Ω		
R42	- 11		15Ω		
R43	- 11		15Ω		
R44	- 49		510Ω		
R45	- 49		510Ω		
R46	- 56		10 K		
R47	- 56		10 K		
R48	- 80		100K		
R49	- 80		100K		
R50	- 56		10K		
R51	- 80		100K		
R52	- 40		100K		
R53	- 56		10K		
R54	- 90		100K		
R55	- 80		100K		
R56	1006750 - 80		100K	±2%	1/4 W
R57	1010369 - 47		680K	±5%	1/8 W
R58	1006750 - 84		150 K	±2%	1/4 W
R59	- 25		51Ω		
R60	- 73		51 K		
R61	- 73		51 K		
R62	- 25		51Ω		
R63	- 64		22 K		
R64	- 80		100K		
R65	1006750 - 52		680Ω	±2%	1/4 W
R66	1010369 - 25		33 K	±5%	1/8 W
R67	1006750 - 33		200Ω	±2%	1/4 W
R68	- 47		50Ω		
R69	- 47		50Ω		
R70	- 47		50Ω		
R71	- 39		200Ω		
R72	- 39		200Ω		
R73	- 49		510Ω		
R74	- 49		510Ω		
R75	- 49		510Ω		
R76	- 56		10 K		
R77	- 56		10 K		
R78	- 56		10 K		
R79	- 80		100K		
R80	1006750 - 80		100K	±2%	1/4 W
R124	1010604 - 16		750	±1%	1 W
R125	1006750 - 47		4300	±2%	1/4 W
R126	- 31		910		
R127	- 63		20K		
R128	- 56		10 K		
R129	- 47		4300		
R130	- 35		1.3K		
R131	- 63		20K		
R132	1006750 - 39	RESISTOR	2000	±2%	1/4 W

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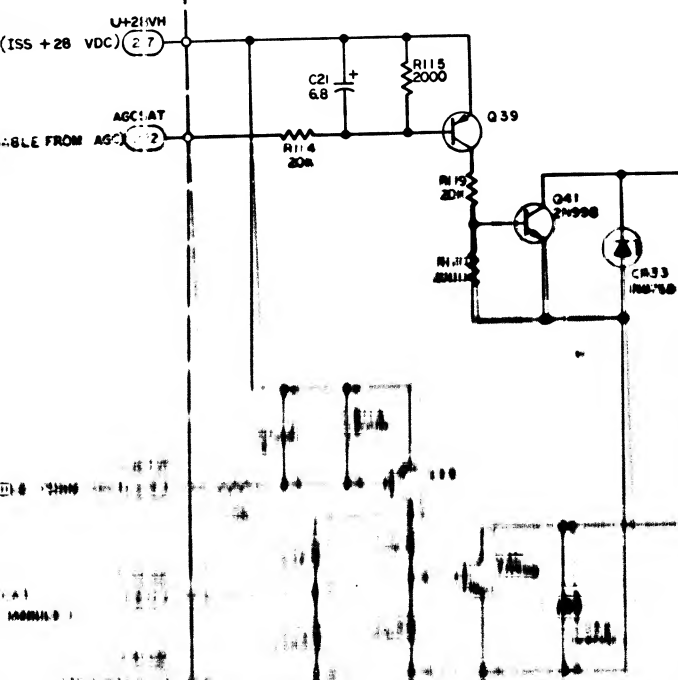
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NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
PRESCRIBED BY MIL-D-70327
2. RESISTOR VALUES ARE IN OHMS
3. CAPACITOR VALUES ARE IN MICROFARADS UNLESS OTHERWISE SPECIFIED
4. WIREWRAP PROGRAM PIN DESIGNATIONS ARE LABELED ABOVE PIN NUMBERS

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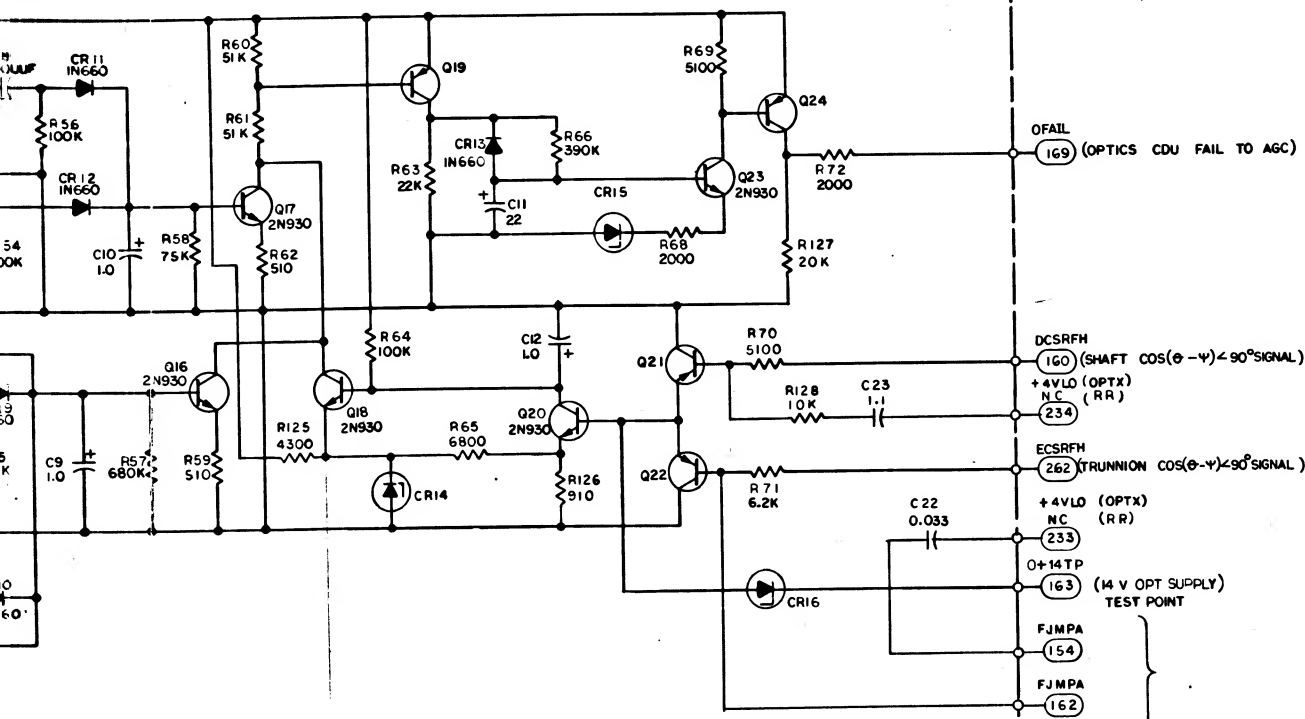


REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1006750-39	RESISTOR	2000	±2%	1/4 W
R2	-63		20K		
R3	-63		20K		
R4	-63		20K		
R5	-63		20K		
R6	-63		20K		
R7	-39		2000		
R8	-39		2000		
R9	-39		2000		
R10	-39		2000		
R11	-39		2000		
R12	-37		2000		
R13	-35		1500		
R14	-35		1500		
R15	-35		1500		
R16	-35		1500		
R17	-35		1500		
R18	-35		1500		
R19	-35		1500		
R20	-35		1500		
R21	-35		1500		
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R24	-35		1500		
R25	-35		1500		
R26	-35		1500		
R27	-35		1500		
R28	-35		1500		
R29	-35		1500		
R30	-35		1500		
R31	-35		1500		
R32	-35		1500		
R33	-35		1500		
R34	-35		1500		
R35	-35		1500		
R36	-35		1500		
R37	-35		1500		
R38	-35		1500		
R39	-35		1500		
R40	-35		1500		
R41	-35		1500		
R42	-35		1500		
R43	-35		1500		
R44	-35		1500		
R45	-35		1500		
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R47	-35		1500		
R48	-35		1500		
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R56	-35		1500		
R57	-35		1500		
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R59	-35		1500		
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R76	-35		1500		
R77	-35		1500		
R78	-35		1500		
R79	-35		1500		
R80	-35		1500		
R81	-35		1500		
R82	-35		1500		
R83	-35		1500		
R84	-35		1500		
R85	-35		1500		
R86	-35		1500		
R87	-35		1500		
R88	-35		1500		
R89	-35		1500		
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R95	-35		1500		
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R99	-35		1500		
R100	-35		1500		

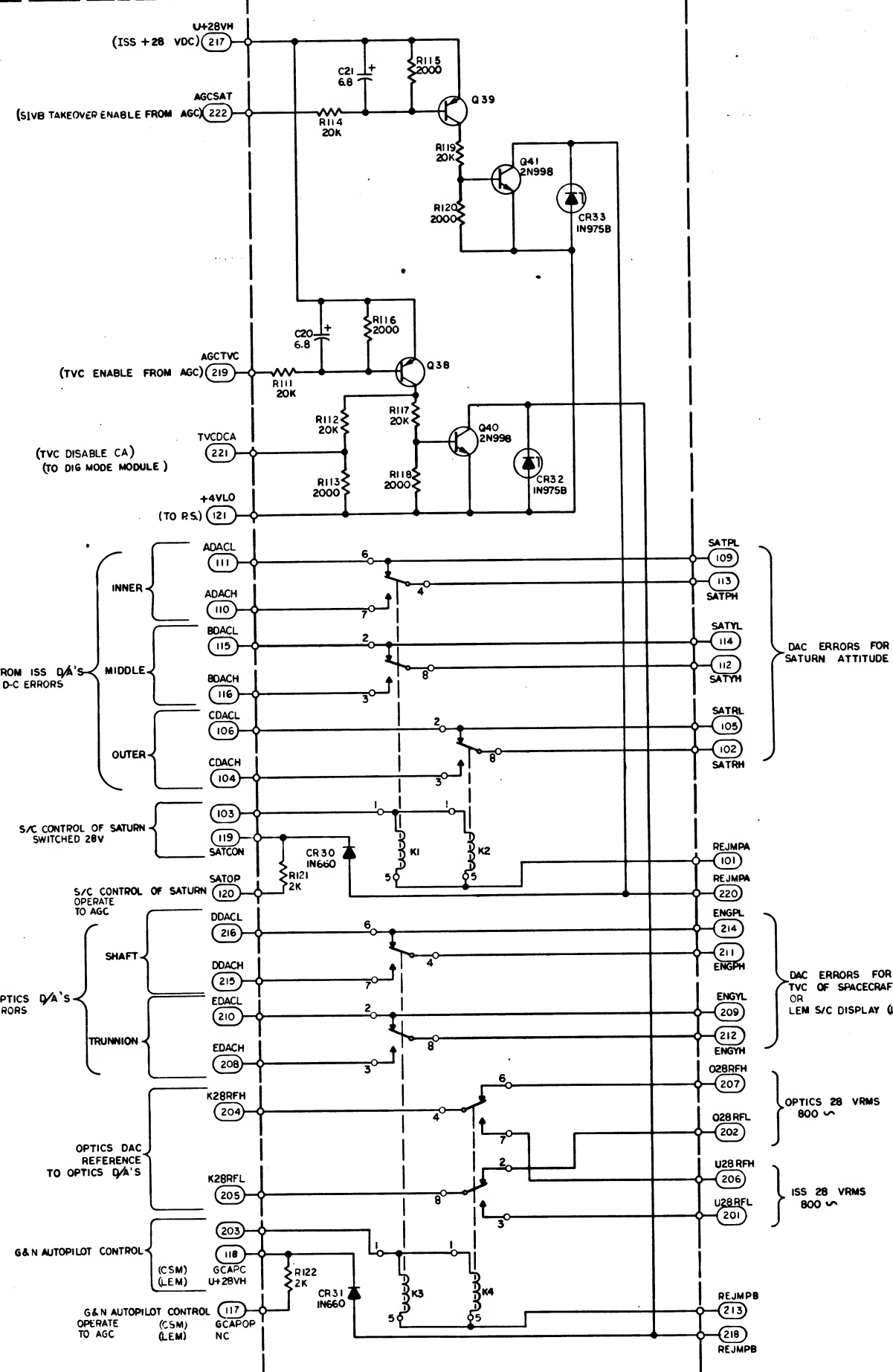
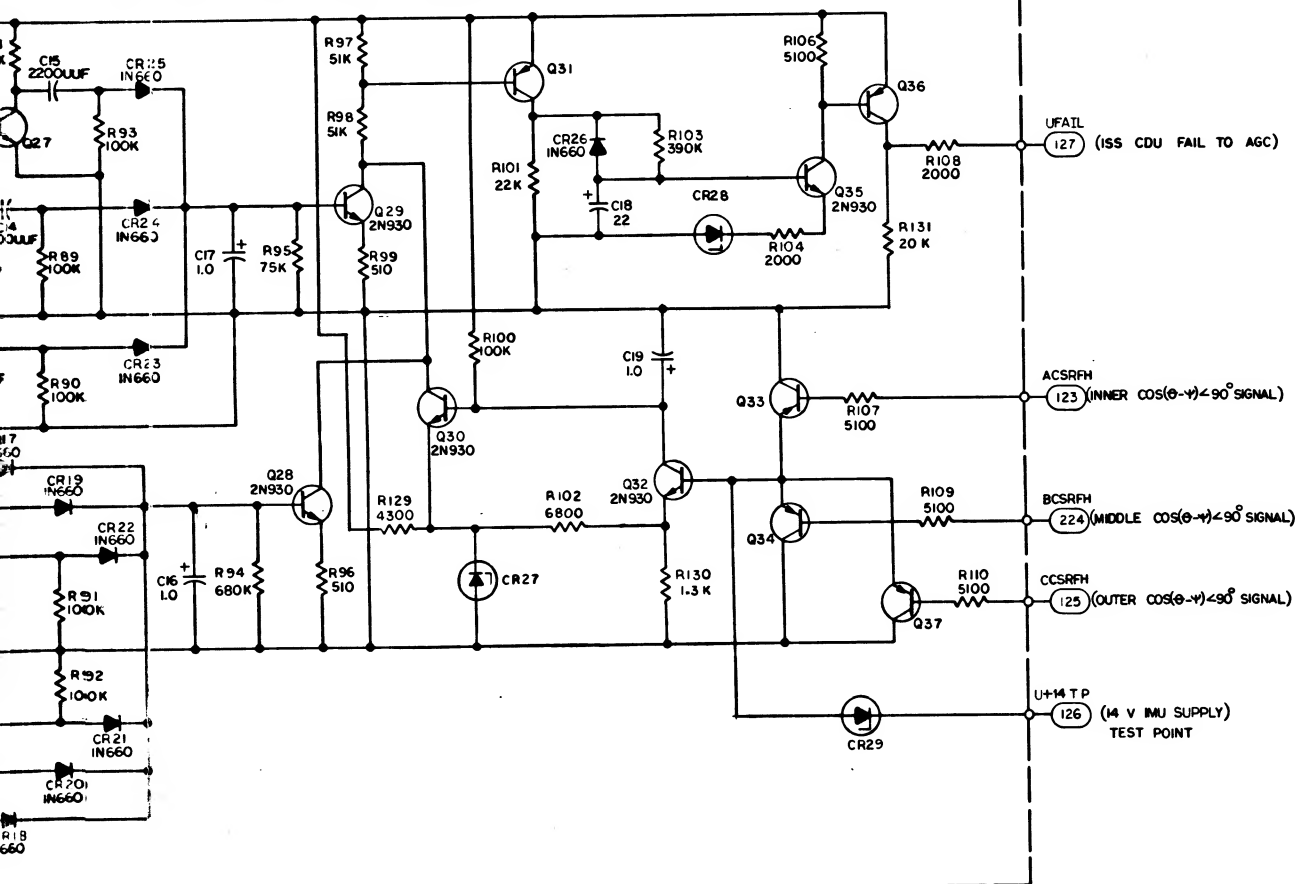
REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R81	1006750-80	RESISTOR	100K	±2%	1/4 W
R82	-80		100K		
R83	-80		100K		
R84	-80		100K		
R85	-80		100K		
R86	-80		100K		
R87	-80		100K		
R88	-80		100K		
R89	-80		100K		
R90	-80		100K		
R91	-80		100K		
R92	-80		100K		
R93	1006750-80		100K	±2%	1/4 W
R94	1010369-101		680K	±5%	1/8 W
R95	1006750-77		75K	±2%	1/4 W
R96	-25		51K		
R97	-25		51K		
R98	-25		51K		
R99	-25		51K		
R100	-25		51K		
R101	-25		51K		
R102	-25		51K		
R103	-25		51K		
R104	-25		51K		
R105	-25		51K		
R106	-25		51K		
R107	-25		51K		
R108	-25		51K		
R109	-25		51K		
R110	-25		51K		
R111	-25		51K		
R112	-25		51K		
R113	-25		51K		
R114	-25		51K		
R115	-25		51K		
R116	-25		51K		
R117	-25		51K		
R118	-25		51K		
R119	-25		51K		
R120	-25		51K		
R121	-25		51K		
R122	-25		51K		
R123	-25		51K		
R124	-25		51K		
R125	-25		51K		
R126	-25		51K		
R127	-25		51K		
R128	-25		51K		
R129	-25		51K		
R130	-25		51K		
R131	-25		51K		
R132	-25		51K		
R133	-25		51K		
R134	-25		51K		
R135	-25		51K		
R136	-25		51K		
R137	-25		51K		
R138	-25		51K		
R139	-25		51K		
R140	-25		51K		
R141	-25		51K		
R142	-25		51K		
R143	-25		51K		
R144	-25		51K		
R145	-25		51K		
R146	-25		51K		
R147	-25		51K		
R148	-25		51K		
R149	-25		51K		
R150	-25		51K		
R151	-25		51K		
R152	-25		51K		
R153	-25		51K		
R154	-25		51K		
R155	-25		51K		
R156	-25		51K		
R157	-25		51K		
R158	-25		51K		
R159	-25		51K		
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R166	-25		51K		
R167	-25		51K		
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R170	-25		51K		
R171	-25		51K		
R172	-25		51K		
R173	-25		51K		
R174	-25		51K		
R175	-25		51K		
R176	-25		51K		
R177	-25		51K		
R178	-25		51K		
R179	-25		51K		
R180	-25		51K		
R181	-25		51K		
R182	-25		51K		
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R184	-25		51K		
R185	-25		51K		
R186	-25		51K		
R187	-25		51K		
R188	-25		51K		
R189	-25		51K		
R190	-25		51K		
R191	-25		51K		
R192	-25		51K		
R193	-25		51K		
R194	-25		51K		
R195	-25		51K		
R196	-25		51K		
R197	-25		51K		
R198	-25		51K		
R199	-25		51K		
R200	-25		51K		

REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
CR13	Q10365	DIODE	1N650		
CR14	Q10372-16		1N650		
CR15	Q10372-16		1N650		
CR16	Q10372-16		1N650		
CR17	Q10365		1N650		
CR18					
CR19					
CR20					
CR21					
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CR97					
CR98					
CR99					
CR100					

R.R./OPTICS CDU FAIL DETECT CIRCUIT

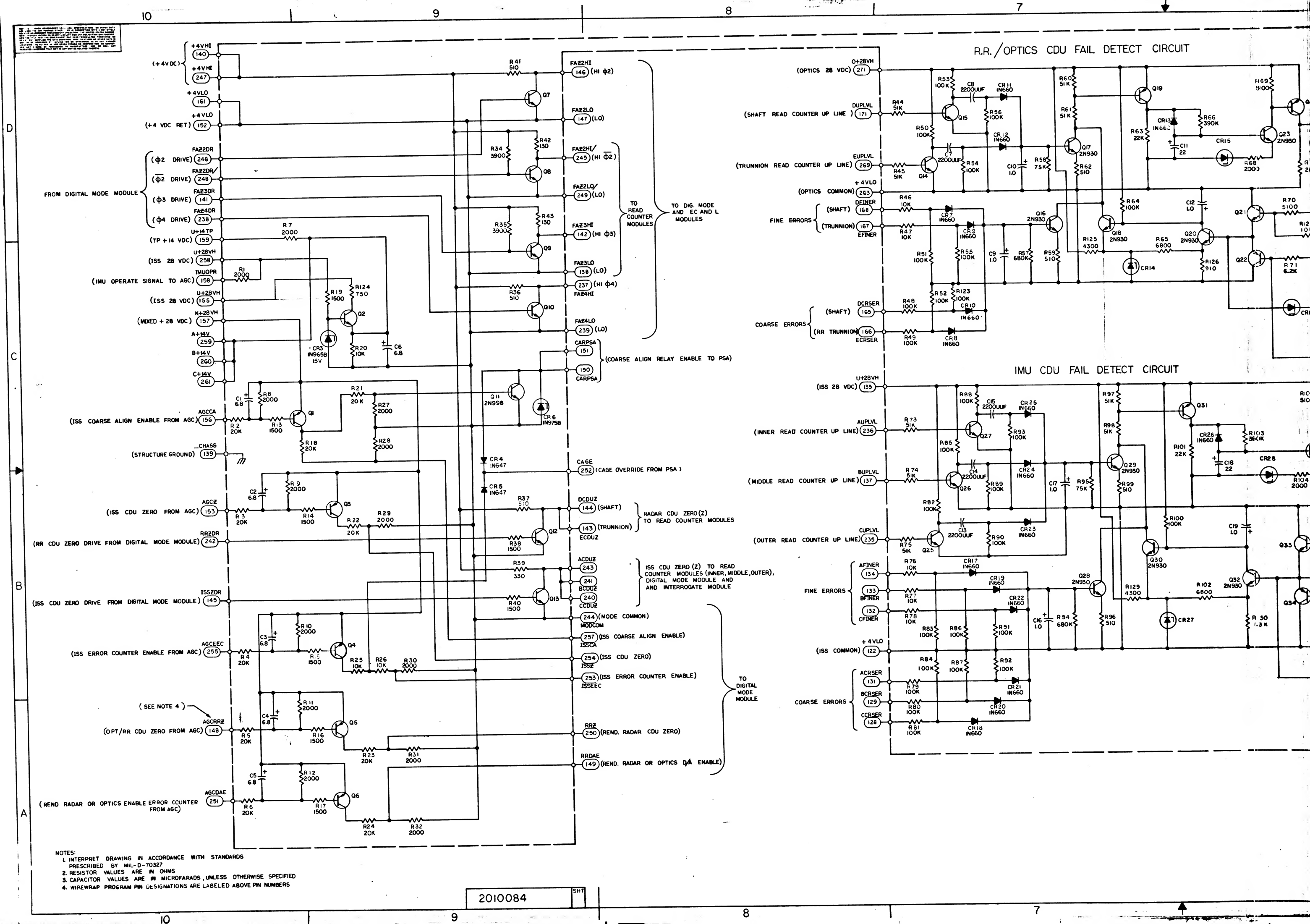


IMU CDU FAIL DETECT CIRCUIT



REF DES	PART NO.	DESCRIPTION	VALUE	TOL	RATING
R1	1006750 -39	RESISTOR	200K	±2%	1/4 W
R2	-63		20K		
R3	-63		20K		
R4	-63		20K		
R5	-63		20K		
R6	-63		20K		
R7	-39		2000		
R8	-39		2000		
R9	-39		2000		
R10	-39		2000		
R11	-39		2000		
R12	-39		2000		
R13	-36		1500		
R14	-36		1500		
R15	-36		1500		
R16	-36		1500		
R17	-36		1500		
R18	-63		20K		
R19	-36		1500		
R20	-56		10K		
R21	-63		20K		
R22	-63		20K		
R23	-63		20K		
R24	-63		20K		
R25	-56		10K		
R26	-56		10K		
R27	-39		2000		
R28	-39		2000		
R29	-39		2000		
R30	-39		2000		
R31	-39		2000		
R32	-39		2000		
R34	-46		3900		
R35	-46		3900		
R36	-25		510		
R37	-25		510		
R38	-36		1500		
R39	-20		330		
R40	-36		1500		
R41	-25		510		
R42	-11		130		
R43	-11		130		
R44	-73		51K		
R45	-73		51K		
R46	-56		10K		
R47	-56		10K		
R48	-80		100K		
R49	-80		100K		
R50	-80		100K		
R51	-80		100K		
R52	-80		100K		
R53	-80		100K		
R54	-80		100K		
R55	-80		100K		
R56	1006750 -80		100K	±2%	1/4 W
R57	1010369 -101		680K	±5%	1/8 W
R58	1006750 -77		75K	±2%	1/4 W
R59	-25		510		
R60	-73		51K		
R61	-73		51K		
R62	-25		510		
R63	-64		22K		
R64	-80		100K		
R65	1006750 -52		680K	±2%	1/4 W
R66	1010369 -95		390K	±5%	1/8 W
R68	1006750 -39		2000	±2%	1/4 W
R69	-45		5100		
R70	-45		5100		
R71	-51		62K		
R72	-39		2000		
R73	-73		51K		
R74	-73		51K		
R75	-73		51K		
R76	-56		10K		
R77	-56		10K		
R78	-56		10K		
R79	-80		100K		
R80	1006750 -80		100K	±2%	1/4 W
R124	1010604 -16		750	±1%	1 W
R125	1006750 -47		4300	±2%	1/4 W
R126	-31		910		
R127	-63		20K		
R128	-56		10K		
R129	-47		4300		
R130	-35		1.3K		
R131	1006750 -63	RESISTOR	20K	±2%	1/4 W

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- NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS
 2. PRESCRIBED BY MIL-D-70327
 3. RESISTOR VALUES ARE IN OHMS
 4. CAPACITOR VALUES ARE IN MICROFARADS, UNLESS OTHERWISE SPECIFIED
 5. WIREWRAP PROGRAM PIN DESIGNATIONS ARE LABELED ABOVE PIN NUMBERS